Identifying Enterprise Leverage Points in Defense Acquisition Program Performance

by

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Large, complex systems development programs in the Department of Defense are finding it more difficult to deliver desired capabilities to the end user on time and on budget than ever before. Evidence exists that almost all developmental programs on record are over cost and schedule, costing the Department and ultimately the U.S. taxpayer billions of dollars more than anticipated. Numerous studies over many decades have addressed various aspects of the problems plaguing these efforts with many recommendations. Unfortunately, most of these recommendations have been ignored or poorly implemented with limited success. This work embodies an exploratory systems approach to characterize the system of acquiring large, complex, socio-technological systems for the Department of Defense. Through a series of qualitative studies and in-depth interviews with individuals working in the Joint Capabilities Integration Development System (JCIDS), the Planning, Programming, Budgeting, and Execution (PPBE) process, and the Acquisition system, a model of the larger ?enterprise of acquisition? or Acquisition System was developed. The model has a scope ranging from the very early beginnings of any program through the conclusion of developmental activities. The methodology used consisted of stringing together the individual pieces of the system defined by probabilistic distributions of time and corresponding probabilistic decision points into a model ideal for discrete-event simulation. An extensive program of verification and validation of the model was carried out to increase confidence in the model and its simulation outcomes. Experimental system interventions, designed to mimic potential policy interventions and/or system changes, were introduced into the model and the corresponding outcomes analyzed. Results show several interventions have varying degrees of influence and suggest no single antidote exists for solving the problems related to Acquisition. Furthermore, many of the outcomes of the system can be described as emergent behaviors versus problems stemming from poor program management, program risk management, or requirements management.

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This work embodies an exploratory systems approach to characterize the system of acquiring large, complex, socio-technological systems for the Department of Defense. Through a series of qualitative studies and in-depth interviews with individuals working in the Joint Capabilities Integration Development System (JCIDS), the Planning, Programming, Budgeting, and Execution (PPBE) process, and the Acquisition system, a model of the larger "enterprise of acquisition" or Acquisition System was developed. The model has a scope ranging from the very early beginnings of any program through the conclusion of developmental activities. The methodology used consisted of stringing together the individual pieces of the system defined by probabilistic distributions of time and corresponding probabilistic decision points into a model ideal for discrete-event simulation. An extensive program of verification and validation of the model was carried out to increase confidence in the model and its simulation outcomes. Experimental system interventions, designed to mimic potential policy interventions and/or system changes, were introduced into the model and the corresponding outcomes analyzed. Results show several interventions have varying degrees of influence and suggest no single antidote exists for solving the problems related to Acquisition. Furthermore, many of the outcomes of the system can be described as emergent behaviors versus problems stemming from poor program management, program risk management, or requirements management.

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List of Acronyms

A1	Manpower and Personnel
A2	Intelligence
A3	Air, Space and Information Operations
A4	Logistics
A5	Plans and Requirements
A6	Communications
A7	Installations and Mission Support
A8	Strategic Plans and Programs
A9	Analyses, Assessments and Lessons Learned
ACAT	Acquisition Category
ACC	Air Combat Command
ACWP	Actual Cost of Work Performed
ADM	Acquisition Decision Memorandum
AF	Air Force
AFAKSS	Air Force Acquisition Knowledge Sharing System
AFAM	Air Force Acquisition Model
AFB	Air Force Board
AFB	Air Force Base
AFC	Air Force Council
AFDO	Award Fee Designating Official
AFG	Air Force Group
AFI	Air Force Instruction
AFIT	Air Force Institution of Technology
AFMC	Air Force Materiel Command
AFRL	Air Force Research Laboratory
AFROCC	Air Force Requirements for Operational Capabilities Council
AIS	Automated Information System
ALC	Air Logistics Center
AOA	Analysis of Alternatives
APB	Acquisition Program Baseline
APOM	Amended Program Objective Memorandum
AQ	refers to SAF/AQ
AQX	refers to SAF/AQX
ASC	Aeronautical Systems Center
ASD	Assistant Secretary of Defense
AT&L	Acquisition, Technology and Logistics

BAC	Budget at Completion
BCG	Boston Consulting Group
BCP	Budget Change Proposal
BCWP	Budgeted Cost for Work Performed
BCWS	Budgeted Cost for Work Scheduled
BES	Budget Estimate Submission
BPM	Business Process Modeling
BR	Budget Request

C3I	Command, Control, Communications, and Intelligence
C4CS	Command, Control, Communications, and Computer Systems
C&I	Communication and Information
CAE	Component Acquisition Executive
CBA	Capabilities Based Assessment
CDD	Capability Development Document
CDR	Critical Design Review
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CJCSM	Chairman of the Joint Chiefs of Staff Manual
CIO	Chief Information Officer
C-level	Corporate level
COA	Course of Action
COCOMS	Combatant Commands
COMACC	Commander ACC
CONOPS	Concept of Operation
CP	Capability Plan
CP	Change Proposal
CPD	Capability Production Document
CPI	Cost Efficiency
CPIF	Cost Plus Incentive Fee
CPR	Cost Performance Report
CRS	Congressional Research Service
CSAF	Chief of Staff of the Air Force
CS&P	Competitive Sourcing and Privatization
CSP	Cost, Schedule, and Performance
CV	Vice Chairman
CV	Cost Variance
D	Disconnect
DAB	Defense Acquisition Board
DAES	Defense Acquisition Executive System
DAMIR	Defense Acquisition Management Information Retrieval
DAPA	Defense Acquisition Performance Assessment
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workers Improvement Act
DOD	Department of Defense
DODI	Department of Defense Instruction
DOTMLPF	Doctrine, Organization, Training, Material, Leadership and Education, Personnel and Facilities
DCR	DOTMLPF Change Recommendation
DIA	Defense Intelligence Agency
DRR	Design Readiness Review
DSM	Design Structure Matrix
DT&E	Developmental Test and Evaluation
DTIC	Defense Technical Information Center
EAC	Estimate at Completion

ECP	Engineering Change Proposal
EOA	Early Operational Assessment
EPP	Enhanced Planning Process
ESC	Electronic Systems Center
EVMS	Earned Value Management Systems
FCB	Functional Capabilities Board
FIFO	First In, First Out
FMECA	Failure Mode, Effects, and Criticality Analysis
FOC	Full Operational Capability
FRP	Full Rate Production
FSA	Functional Solutions Analysis
FY	Fiscal Year
FYDP	Future Years Defense Program/Plan
GAO	Government Accountability Office
CGIC	Global Cyberspace Integration Center
GE	General Electric
HPT	High Performance Team
HQ	Headquarters
I	Initiative
ICAF	Industrial College of the Armed Forces
ICD	Initial Capabilities Document
ICE	Independent Cost Estimate
IDA	Institute for Defense Analysis
IOC	Initial Operating Capability
IOT&E	Initial Operational Test & Evaluation
IPL	Integrated Priority List
IPT	Integrated Process Team
IRSS	Integrated Requirement Support System
ISP	Integrated Support Plan
IT	Information Technology
ITAB	Information Technology Acquisition Board
ITT	Integrated Test Team
J1	Manpower and Personnel
J2	Joint Staff Intelligence
J3	Operations
J4	Logistics
J5	Strategic Plans and Policy
J6	Command, Control, Communications, and Computer Systems
J7	Operational Plans & Joint Force Development
J8	Force Structure Resources and Assessment
JCB	Joint Capabilities Board
JCD	Joint Capability Document
JCIDS	Joint Capabilities Integration Development System

JFCOM	Joint Forces Command
JIC	Joint Integrating Concepts
JPD	Joint Potential Designator
JPG	Joint Programming Guidance
JROC	Joint Requirements Oversight Council
JS	Joint Staff
KPP	Key Performance Parameter
KSA	Key System Attribute
LCMP	Life Cycle Management Plan
LRIP	Limited Rate Incremental Production
MAIS	Major Automated Information System
MAJCOM	Major Command
MAR	Monthly Acquisition Report
MAUT	Multi-Attribute Utility Theory
MBI	Major Budget Issue
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MILCON	Military Construction
MIT	Massachusetts Institute of Technology
MR	Management Reserve
MS	Milestone
NAS	National Academy of Sciences
NIP	National Intelligence Program
NPD	New Product Development
NPS	Naval Postgraduate School
NSS	National Security Strategy
O	Offset
OMB	Office of Management and Budget
OPR	Officer Performance Report
OSD	Office of the Secretary of Defense
OT&E	Operational Test and Evaluation
P&R	Planning and Requirements
PB	President's Budget
PBD	Program Budget Decision
PCP	Program Change Proposals
PD	Product Development
PDM	Program Decision Memorandum
PDR	Preliminary Design Review
PE	Program Element
PEM	Program Element Monitor
PEO	Program Executive Officer
PHA	Physical Health Assessment

PM	Program Manager
POM	Program Objective Memorandum
POPS	Probability of Program Success
PPBE	Planning, Programming, Budgeting, and Execution
PPBES	Planning, Programming, Budgeting, and Execution System (no longer favored)
PPD	Program Planning Document
PR	Program Review
QDR	Quadrennial Defense Review
RAND	Research ANd Development Corporation
R&D	Research and Development
RCT	Requirements Crosswalk Table
RFP	Request for Proposal
RMP	Radar Modernization Program
RDT&E	Research, Development, Test and Evaluation
RSR	Requirements Strategy Review
SACOM	Sustainment/Acquisition Composite Model
SAE	Service Acquisition Executive
SAF	Secretary of the Air Force
SAF/AQ	Secretary of the Air Force – Acquisition
SAF/AQX	Secretary of the Air Force – Acquisition Integration
SAF/FMB	Secretary of the Air Force – Budget
SAF/XC	Secretary of the Air Force – Warfighting Integration & Chief Information Officer
SAR	Special Access Required
SAR	Selected Acquisition Report
SE	Systems Engineering
SES	Senior Executive Service
SIMAN	SIMulation Analysis
SLRG	Senior Leadership Review Group
SMART	System Metric and Reporting Tool
SPG	Strategic Planning Guidance
SPI	Schedule Efficiency
SPO	System Program Office
SPOC	Special Access Required (SAR) Programs Oversight Committee
SPRG	Special Program Review Group
SSA	Source Selection Authority
SV	Schedule Variance
SVC	Service
SVR	System Verification Review
T&E	Test and Evaluation
TDS	Technology Development Strategy
TEMP	Test and Evaluation Master Plan
TRR	Test Readiness Review
US	United States

USAF	United States Air Force
USC	United States Code
USD	Undersecretary of Defense
VAC	Variance at Completion
VSM	Value Stream Mapping

CHAPTER 1 -- INTRODUCTION

Throughout the twentieth century, and into the beginnings of the 21st, the United States military has enjoyed unprecedented superiority in the systems and methods used to gain victory on the battlefield. These tangible results are the outcome of thousands of people working to design, develop and acquire complex weapons systems. However, throughout the past four decades, and perhaps even longer, the United States Defense establishment has been fighting another war; one that it appears to be losing badly--that of budgets and schedules out of control in the development of its systems. Furthermore, the trends seem to be getting worse. In the early spring of 2009, the Government Accountability Office (GAO) released scathing reports on the state of defense acquisitions [1]. Nearly all of the complex systems and development examined by these reports were over budget or over schedule or both [2].

These reports come on the heels of and are merely an appendix to the many reports that have been issued since the early 1960s decrying the state of defense acquisition and bemoaning its outcomes. In one of the more recent studies, the Defense Acquisition Performance Assessment (DAPA) examined the history of acquisition reform in the US military and found that most of the substantive reform suggestions and recommended policy changes in those historical studies were either ignored or trivialized [3, 4]. Although the DAPA report's own conclusions have been warmly embraced, their own recommendations have met a similar fate: a tepid response from both the Department of Defense and congressional leadership as noted in the summary of a recently published National Academy of Sciences report about the early phases of Air Force Acquisition [5].

The structure and appearance of the organizations responsible to acquire new systems have only grown more complicated through the years. Between policy choices and statutory requirements, the Department of Defense has developed a number of processes and organizations that help manage systems acquisition. A virtual army of largely unsung skilled professionals toil to deliver these systems

to the field. Nevertheless, Congressional concern about the acquisition of systems is high. In the House Armed Services Committee's report on the FY 2007 defense authorization bill it states:

> Simply put, the Department of Defense (DOD) acquisition process is broken. The ability of the department to conduct the large-scale acquisitions required to ensure our future national security is a concern of the committee. The rising costs and lengthening schedules of major defense acquisition programs lead to more expensive platforms fielded in fewer numbers. The committee's concerns extend to all three key components of the acquisition process including requirements generation, acquisition and contracting, and financial management [6] .

The idea that all of the major system components are not functioning properly resonates with many of those working in the acquisition system. Recently, various organizations have suggested product portfolio management and better risk management as the way to address the worsening trends of defense acquisition [7]. The thinking goes that if systems are managed as portfolios, trade-offs could be made across that portfolio, both to manage the throughput and also to optimize resource deployment to get better outcomes. Risk is a natural part of that discussion. The United States Air Force is currently engaged in an effort to adopt these ideas and is, therefore, quite interested in portfolio management and risk.

Some might argue, though, that despite the processes, policies and other controls that are in place, and based on historical performance, it appears that the Defense Department is willing to pay any price versus managing to a cost or schedule. Still others despair over the daunting challenges the acquisition system faces. For all of the reasons outlined above, this study was undertaken to better understand the performance of the overall acquisition system, including its major processes and important stakeholders. What follows has become an instructive journey through a process of research that did not have as a foregone conclusion any ideas or recommendations, the use of any modeling or simulation approach, or any other kind of analysis framework. The easy answer would have been to look merely at the outcomes of the acquisition system and conclude that the acquisition process is the broken link in the chain, but rather this journey took a deeper and broader look at all of the components of acquisition. This approach led to a series of insights and discoveries culminating in the current form

of this research that uses discrete event simulation to verify and validate the insights and contributions documented in this work.

Research questions, approach, and methods

The questions that guided this research are neither new nor profound. Simply stated, the main question was, "How does the acquisition system work?" A follow-up question was, "Why does the system behave the way that it does?" And finally, "Are there things that can be done to improve the system?"

Initially, a great deal of effort was spent reading as much as possible that was written about the system. The sources for this information included official documentation, books, and journal articles or other materials written about the acquisition system. Over time, this research effort was expanded to include the other portions of the acquisition system, namely the requirements portion and the funding portion of the system.

After becoming well-versed in literature, several small studies were undertaken to better understand the acquisition system. The first study was done with acquisition professionals, and the second study looked upon those learnings and interviewed players in the other two systems.

Building upon all these efforts, a model was developed to capture the things that were learned as well as to frame the problem in a way that could be studied in depth and in a repetitive manner in order to gain insight and understanding about the behavior of the system.

Research Limitations

The research presented here is not intended to be the final word, nor the last study ever conducted about the overall acquisition system. The sheer size and complexity of the system required several assumptions to be made, which will be delineated in later chapters, in order to keep the problem tractable. Furthermore, even though a number of people were interviewed, and a great deal of

effort was put into the verification and validation of the information received and recorded, these people still represent a small sample of the overall workforce in the Department of Defense. These people undoubtedly carry their own biases and understandings of the system. While a great deal of effort was made to ensure that the responses and their understanding of the system was reasonable, undoubtedly there are a multitude of differing opinions throughout the department. Therefore, there is a possibility that certain things were omitted or misrepresented. Other items may have received disproportionate weight or importance in this discussion. However, it is hoped that the results of this work will provide a broad foundation for future research, and even greater insights into the operation and behavior of the Department of Defense's acquisition system.

Dissertation Outline

The following is a brief description of the outline of this dissertation. Chapter 2 contains a review of the literature. Following some initial definitions, discussions about product development processes will take place. Much of the space is devoted to the topics of risk and portfolio management in a product development context, followed by an overview of the extended acquisition system, sometimes called the enterprise of acquisition, including a discussion of the three major sub processes of acquisition management, requirements, and the financial process. Finally, there will be a short discussion about using simulation for modeling and analysis and key conclusions synthesized from all of the literature. Chapter 3 describes the results of the first in-depth study of acquisition done as part of this work. It investigates the use of portfolios and risk in system development and examines the acquisition system in more depth. The examination reviews many of the insights into the system-level process gained by interviewing key players within the acquisition system. Chapter 4 presents the analysis of another study of acquisition, but focusing solely on the requirements and financial processes involved. Together, these two studies help lay the foundation for the modeling of the research that this dissertation describes. Chapter 5 describes the development of the model of the extended acquisition

system, embodying all of the insights and other things learned in the earlier stages of this research. The basic structure, approach and rationale of the modeling choices will be given in this chapter. Chapter 6 covers the steps taken to verify and validate the model. Chapter 7 explains the operation of the model. It introduces the initial setup and operation of the model, as well as providing a glimpse of the typical output from the model and a representative set of outcomes. A secondary analysis using Design Structure Matrices is presented, showing the insights gained from using this tool and perspective. Chapter 8 introduces the specific hypothesis, key questions and interventions that were implemented by simulating the model under specific conditions. The analysis and interpretation of the interventions and their results comprise the bulk of this chapter. Finally, chapter 9 concludes by outlining the several conclusions that can be drawn from this work with an overall summary of the dissertation. Included in this chapter are recommendations for future work as well as policy recommendations that will positively impact the enterprise of acquisition. Several appendices exist to give better understanding of the model. Appendix A lists a representative sampling of questions used in the initial interviews of the different acquisition subsystems. Appendix B contains a thorough step-by-step explanation of the model details. Appendix C contains a copy of the model source code in the SIMAN simulation language. Appendix D contains an overview of other studies about cost and schedule performance of the acquisition system.

Major contributions of this work include the introduction of a qualitative and quantitative approach to studying large complex systems using discrete-event simulation, and, showing that Acquisition System outcomes are influenced by emergent behaviors of the system. The emergent behaviors of the system are those unexpected consequences, system attributes and influences stemming from process design, interactions, and execution of the component processes of the larger system which were neither designed, neither intended nor anticipated.

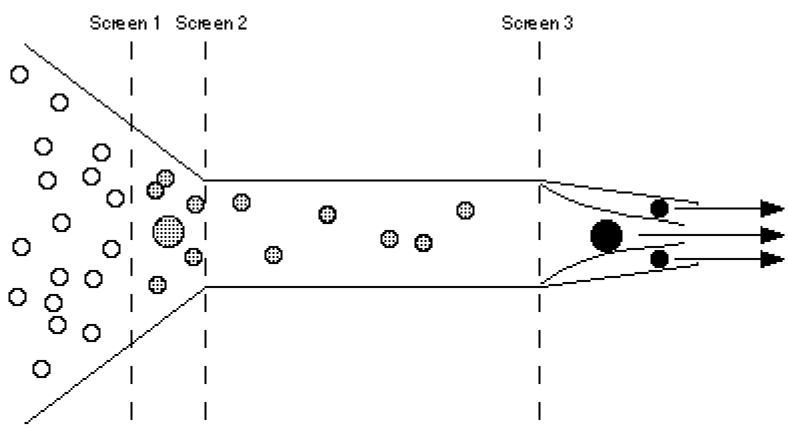
CHAPTER 2 – LITERATURE REVIEW

This chapter contains the background and the rationale for studying this problem through a close examination of the literature. Since the process of developing large complex systems for the defense establishment is very complicated, various areas of literature will be examined in order to thoroughly evaluate the domain space of the overall process, broken down into four key areas. First, generic product development processes will be reviewed, followed by a more focused discussion of risk. Combined, these two topics lead into a discussion about portfolio management, followed by reviewing the literature about the enterprise of acquisition, consisting of JCIDS, PPBE, and the traditional acquisition system (comprised of government personnel and contractors). Next, a short examination of the relevant literature using modeling and simulation for these kinds of activities will be discussed. Finally, these will all be wrapped up into key conclusions, which set the stage for a thorough understanding of the key processes and issues at work within the acquisition system.

A few definitions are in order. First, the United States Air Force processes used in the development of large complex systems will be considered as a surrogate for all the other branches of service. The terms “acquisition, acquisition system, acquisition program” all refer to their application under the auspices of the United States Air Force. Second, the terms “project and project management” are often interchangeably used with the terms “program and program management” in the US Air Force. There are some differences between usages of the terms because a project typically refers to a smaller development effort of a larger program. A program, then, might be the F-16 or the C-17 or another large defense system. A project, on the other hand, might be a sensor that is going to be part of the F-16 or the C-17 or a satellite space system. However, in terms of high-level discussions, the meaning is interchangeable although the word “program” is the preferred vernacular. The literature also, albeit somewhat sloppily, regards and treats both of these terms nearly the same, i.e. projects and programs.

Product development processes

Since the overall purpose of the Defense Department's acquisition system is the development of a solution to a defined material need, it is only natural to first look at product development processes in general. There are many different approaches that one can take in developing a new product. One of the most common forms is that of a stage gate process, where new products are developed over time and slowly make their way through a defined product development process [8]. This process consists of several distinct phases where short-term goals are realized. These phases are called stages. In order to proceed to the next stage, a gate or milestone review must be successfully accomplished. A gate is an opportunity for leadership to review the progress of the development project and determine whether or not it will proceed. During this incubation period, if you will, certain projects are expected to be killed, while others that show promise will be carried forward gaining more and more definition and fidelity until they are delivered [8, 9]. The U.S. Air Force has adopted this approach and manages with a somewhat similarly structured phase gate process [10].



[8]

Figure 1: An example of a notional product development process

In the product development literature, a recent trend has been to focus on some of the underlying mechanics required for product development. More specifically, focus has been on the decisions that are required throughout the lifecycle of the process to bring a product to fruition. By focusing on decisions, this literature tends to be broad, borrowing ideas and building upon them from

many different academic fields such as engineering, marketing, finance, or operations. One of the more seminal papers in this field, "Product Development Decisions: A Review of the Literature," written by Krishnan and Ulrich [11], reviews a large number of previously published material that discusses such things as projects, program management, risk, portfolio management, and other areas that are essential for developing new products. Similarly, Kahneman, Tversky and Lovollo [12-16] have made significant contributions to product development by studying the psychology of managerial decision-making. In these papers, a recurring theme is learning to manage the risk and uncertainty that may exist when leaders are presented with a decision about a product in development. Furthermore, decisions in these realms tend to be marked with over optimistic projections and managerial biases that can cloud a decision's real outcome.

Risk

The literature reveals some theoretical work linking risk to product development projects. However, a sampling of the literature shows the definition and meaning of risk in this field is often muddled. Among the general meanings of risk, there are competing definitions depending upon the perspective of the various disciplines [3, 17-22]. However, the common elements of these definitions revolve around probabilistic inputs tending to uncertain outcomes.

In product development literature, several kinds of specific risk are enumerated, such as: schedule, performance, development cost, technology, market, and business risk [23]. McManus and Hastings [24] add categories of risk such as: disaster, failure, degradation, market shifts, need shifts, extra capacity, and emergent capabilities. Miller and Lessard [25] enumerate additional kinds of risk, particular to megaprojects, and equally applicable to DOD Acquisition efforts. These are: program stability risk; economic environment risk; and optimism risk. There are even the process-oriented categories of risks of operational, design, manufacturing, and performance according to Chase [26]. Finally, let's not forget interdependencies which can comprise a distinct category of risk [19]. Lessard

and Miller [27] further caution that "risks are multidimensional and thus need to be unbundled for clear understanding of causes, outcomes, and drivers.”

Keizer, et al [28], recently addressed risks in new product development (NPD) using a multi-dimensional approach. They sought to demystify the various kinds of NPD risks along the lines of technological, business, and organizational risks. They developed a taxonomy of nearly 142 “risks” clustered into twelve main risk areas. These risks contain three variables of interest: likelihood, impact, and ability of the product development team to influence the risk within their constraints. These twelve categories are: organization and project management risks; commercial viability risks; consumer acceptance and marketing risks; product family and brand positioning risks; manufacturing technology risks; product technology risks; supply chain and sourcing risks; trade customer risks; competitor risks; public acceptance risks; intellectual property risks; and screening and appraisal risks [28].

Keizer’s enumeration of risks corresponds nicely with Williams’ earlier bibliography of research relating to project risk management [29]. Among the risks in product development identified were: time risk, cost risk, performance risk, and the contractual aspects of risk [30]. Notably, Williams [29] also acknowledges the hand of multiple disciplines (Management Sciences, Operations Research, Engineering, and Psychology/Decision analysis) in shaping the concepts of risk important to projects. He further proposes adding another dimension, predictability, to the traditional understanding of risk, impact vs. probability, in order to distinguish between the outcomes of an intrinsically uncertain situation, aleatoric probability, and outcomes relating to a measure in belief of a proposition, epistemic probability. This observation opens the door to understanding risk from a psychological perspective. Kahneman and others [12-14, 16, 31] have identified the notion of “framing” as a way for us to take mental shortcuts in dealing with complex and risky issues which lead decision makers to discount extreme events because the probability is too low to evaluate intuitively.

In essence, there are nearly as many kinds of risks as there are ways to describe risk, and care must be taken how the word "risk" is defined. There is general agreement in the literature about the kinds of risks common to PD. Effectiveness of risk mitigation activities, however, is difficult to demonstrate because it depends on un-provable counterfactuals [32]. Managing, measuring and mitigating risk is essential to PD, but no clear consensus has yet emerged regarding how to do that. Miller and Lessard [25] nevertheless suggest project outcomes are the most appropriate means to measure risk.

Given an understanding of the risks facing PD, several frameworks exist that suggest ways to manage risk for the product development practitioner. Most of them follow a pattern of risk identification, risk analysis, and risk disposition to describe risk management. Examples of these include references by Frame [19], the Risk Management Guide for the DOD [33], and even an entry in Wikipedia [34]. There are also many other frameworks that focus on a particular portion of these generic risk management frameworks and advocate using various tools and processes for that specific area within risk management. Bresnahan [35] and Hastings & McManus [24] for example, each have differing frameworks for approaching risks depending on the task at hand or the phase (initial concept, prototype, final design) of a project in the product development cycle. Frame [19] elaborates on this by saying "the risks a product encounters vary dramatically over its life". For example, risks encountered in the investment phase are quite different in content and impact from those encountered in the maturity phase.

Oehmen [36] made an important observation about risk management and the larger product development enterprise. He extended the common risk management frameworks beyond their traditional boundaries by adding two framework elements that are ignored or otherwise assumed by most other frameworks: the monitoring of risks and the integration of risks. The "integration of risk" element implies methods by which management pulls together the "big picture" regarding overall risk.

This element should capture the cause and effect network effects among and between multiple projects. "Monitoring of risks" is the framework element describing how management is informed of specific project risks. He documents and describes over fifty-seven different risk management methods and where they are most applicable to be used (for example, FMECA). However, only one method out of the fifty-seven is associated with the integration element. This method is called "scenarios" and is mentioned briefly elsewhere by Miller and Lessard [25]. No explicit method is identified with the monitoring element. Furthermore, he postulates aggregation as a method to use at the enterprise level to manage risk. Shapira [37] agrees with his assertion, but both are devoid of specifics. Given the above, Oheman's framework seems to imply a link to portfolios of projects and their management, but no further elaboration is given.

Portfolio Management strategies

A portfolio, in its most simple definition, is simply a collection of items brought together with a common characteristic. From a product development perspective, portfolios refer to product development projects or programs that have something in common. The common characteristic can be organizationally based (a common reporting chain), resource-based (draw upon the same monies), personality dependent (the same manager), or any other combination. Several authors have suggested managing product portfolios as a way to improve the overall outcomes of product development in terms of the bottom line to a company or meeting the emergent market needs, etc. [38, 39]. However, bringing the concepts of risk and portfolios together may be more difficult than it seems. Managing product portfolios through a conceptual risk measure common across the products in the portfolio is seen as very desirable; however, it is not easily done. Shapira [37] noted that among most executives surveyed, aggregation of risk is very rarely done and although desirable, is usually considered too hard to do. A recent RAND study agreed with both sentiments [40]. However, Aloysius [41], in discussing R&D projects, suggests that firms can consider projects collectively and that risk aggregation helps in

resource decisions. Using aggregated risk and portfolios together could be used to hedge information uncertainty when making decisions, which Krishnan and Ulrich [11] describe as the essence of product development.

But aggregation of risk is not the only way to consider risks in a portfolio. Additional evidence suggests even more kinds of risk are at play when considering portfolios. Fricke and Shenbar [42] show how resource allocation and flexibility play the dominant role in a multi-project environment, consistent with other multi-project management research. Pich, Loch and De Meyer [43] model individual projects as activities resulting from choices. The underlying variable is the information provided depending upon the information environment. Gutierrez and Paul [44] discuss the role subcontracting mechanisms play on project success. These papers touch on other portfolio implications for risk (resource allocation, flexibility, choice, information, and contracting mechanisms) not previously mentioned in the examples of risk aggregation that exist in large, complex product portfolios.

Nevertheless, the benefits of using portfolios in product development should include: having a good balance of projects, promoting a mixture of possible outcomes and a mixture of projects across the product development lifecycle; and the right number of projects in development, a place to make go/no-go decisions, relating to managing the capacity of the product development system [25, 38, 45, 46]. These two concepts of balance and capacity suggest other risks including spanning a temporal dimension that portfolio management implicitly should handle as part of its approach.

Several portfolio management tools and techniques have emerged over time using traditional project financial information that may be construed to include risk as a factor. These include the Growth-share matrix (Boston or BCG matrix) [47], the GE multi-factoral analysis (McKinsey matrix) [48], the advantage Matrix (another BCG matrix) [49], the Ansoff Product-Market Growth matrix [50] and the Contribution Margin Analysis method [51-55]. These matrices attempt to put different projects into different categories to simplify managing towards the benefits of portfolio management mentioned

earlier. Cooper, Edgett, and Kleinschmidt [38] report that among product development firms, techniques which use financial indicators (NPV, iRR, etc.) are the least effective in outcome prediction and control compared to more qualitative methods like scoring models or strategic methods. Nevertheless, these are often the most employed, perhaps reflecting management's familiarity with such tools. Management dissatisfaction with these financial-based tools, however, remains high [38]. The authors [38] recommend taking a balanced approach that uses as many of these tools as possible.

Not surprisingly, the risk literature and practice has evolved to contribute many methods to portfolio settings because many of the issues faced seem to be just extensions of those seen in project risk management. Most classical engineering and operations research approaches used for project risk can also be applied to a portfolio setting. These methods tap a wide spectrum of disciplines and use a wide variety of tools and processes, ranging from simple list-keeping to more formalized approaches. Simple lists and matrices such as those advocated by Bettis & Hall [56] and Fiegenbaum & Thomas [57], bubble diagrams as discussed by Cooper [58], dependency matrices as discussed by Dickinson [59], criteria selection [60], and using value vs. variance [61], quantify risk in portfolios through a mix of qualitative and quantitative methods. Nonetheless, all of these approaches shy away from "hard" or "exact" numbers mainly because any number remains difficult to interpret.

Some risk aggregation or additive methods do exist that may be applied to portfolios in the future. Garvey [62], for instance, uses an index to measure an overall system's performance risk by normalizing all the technical performance measures within a project and then adding them up to give an overall risk index. However, no portfolio level application using this method has yet been noted. Bozeman & Rogers [63] use a simple aggregation of the number of articles, patents, and algorithms resulting from a portfolio of R&D activity to indicate the risk associated with that portfolio, but its application to project portfolios seems limited. Parametric comparison of similar projects using historical data is also a form of aggregation. However, the following go beyond simple mathematical

formulations. One such method advocated by Lovallo [64, 65] is reference-class forecasting taken from the field of behavioral psychology. Another method by Bearden [66] correlates “complexity” (a heuristic-defined term based upon various system attributes) with cost and schedule of projects and finding a threshold that when crossed results in failure of projects.

A favorite method among practitioners to compare projects is adopting multi-attribute utility theory (MAUT) methods. These are currently being used for many portfolio applications. There is an entire body of literature devoted to these methods, including extensions to portfolio selection, mostly drawing from operations research. For example, Lévárdy & Browning [67] use the notion of schedule risk, cost risk, and technical performance risk, each weighted by a specific value, and then added together to denote the risk of a project. Extending this method to a portfolio of projects is problematic because comparing dissimilar risks between projects is difficult. Aloysius [41] proposed using an expected utility framework to show that aggregation of risk would reduce risk aversion for the efficient selection of joint projects by a consortium. Browning & Eppinger [68] discuss MAUT methods at length, including the drawbacks of its complexity and the amount of data required for accurate modeling of risk. The largest limitation noted by them is two-fold: metrics can be gamed, and the choice of the utility function is an important key to the interpretation of results.

More sophisticated approaches may include the use of: Real Options [69-71], System Dynamics [72, 73], Shannon Entropy or Information theory [74-77], Model Predictive Control [78, 79], Control-theoretic forms [80], and Decision-theoretic approaches, but none are being used exclusively to manage portfolios of projects [31, 51, 52, 68, 81-88]. Several of these methods incorporate the use of triangular probability distribution functions to represent worst case, most-likely, and best case risk expressions, tacitly acknowledging the uncertainties that exist in projects.

Enterprise Risk and Portfolio Execution

Notably, all of the above portfolio frameworks assume clear portfolio choices and risks that are known *a priori* and do not and cannot account for day-to-day uncertainties and emerging risks or opportunities over time. The only way to account for such uncertainties and changes is by re-using these tools often, usually on an annual or semiannual basis. It is interesting to note that researchers have devoted the greatest measure of their time and attention to the selection and optimization of project portfolios. Every method then assumes the execution of each portfolio occurs within the bounds of the original assumptions. However, McDonough & Spital [89] reveal a different perspective of portfolios. They suggest after initial portfolio decisions are made, the execution of these decisions, the "how", plays a great role in determining PD success. Granted, individual project performance does make a difference to the overall success of the portfolio, but the "actual efficiency of project portfolio management has, so far, been a rare topic of study" [90]. McNamara & Bromiley [91] agreed and noted there is a pressing need to "measure" risk as decision makers use it in a portfolio, while Ruefli, Collins, & Lacugna [92] lament the decline of studies looking into risk at this level of analysis. No additional mention or examples of portfolio execution studies were found beyond those cited here.

Stanke's framework [93] for high-performing enterprises defines performance of the enterprise as a combination of three items: alignment, efficiency of execution (agility), and effectiveness of outcomes (flexibility). Agility is the ability of an enterprise to address known issues, flexibility is the ability to address unknown issues, and alignment is the behavior, both system and individual, that enhances agility and flexibility. In an ideal sense, a portfolio is successful when it is able to address known and unknown issues and promote strategic behaviors. Westerman and Hunter [94] outlined another enterprise framework including agility as an enterprise risk. They also drew a distinction between "Enterprise risks" (the things that the C-level of a corporation cares about) and "risk factors"

(the things that are managed at lower levels, including individual program risks). If “Enterprise Risk” is assumed when discussing “portfolio risk,” then even more confusion could result.

In reflecting upon the literature reviewed thus far, portfolios should be a mechanism in which whatever is defined to be within a particular portfolio is managed alongside the other portfolio members. Implicit in this is broad control over the composition, resourcing, and execution of all items in the portfolio by the portfolio manager. Further, any product development system using portfolios that does not grant such far-reaching capabilities to those managing the portfolios will not be able to benefit from, leverage, or measure the benefits ascribed to product portfolio management. Furthermore, it appears that no one single method has emerged to identify, define, or measure a “portfolio risk” measure although numerous candidates exist which in some combination may serve as useful surrogates for such a risk measure.

Enterprise Acquisition System

Given the review of product development, the coupling between risk and performance, projects and portfolios and the interplay among all of these underscores the likely emergence of a very complex system. A thorough examination of a complex product development system such as the one used by the United States Air Force is worthwhile to illustrate the capabilities and challenges of such a system. The USAF system is an apt candidate for a closer examination due to its large acquisition responsibilities, its existence within a larger organization, the Department of Defense, and the added complexity of the system due to the USAF being a governmental entity. As noted earlier in this chapter regarding product development in general and the emergence of risk and portfolios as key players, the Department of Defense is no stranger to these ideas and perceived benefits.

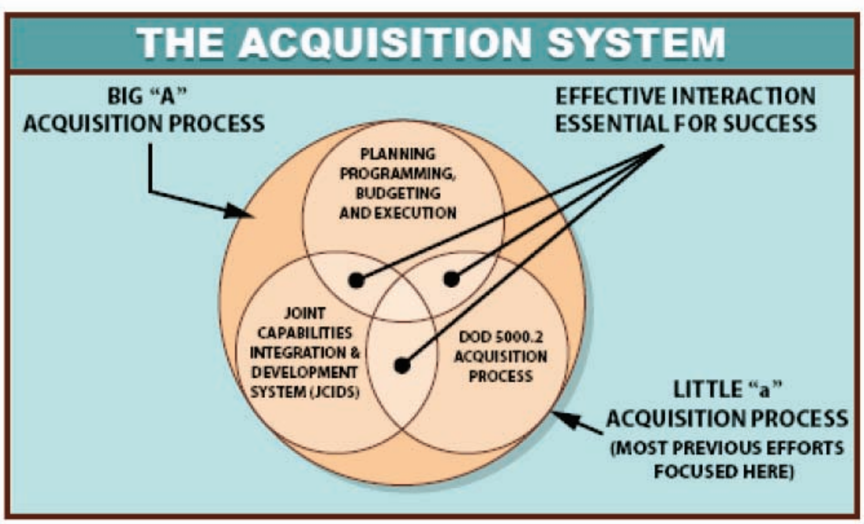
Recently, a Government Accountability Office report [95] has chastised DOD and acquisition programs in general because they “do not capture the requisite knowledge when needed to efficiently and effectively manage program risks.” Not only has risk been identified by the GAO; others see risk as

a major driver of problems in product development and as an area ripe for improvement [46, 96]. Miller and Lessard [25] were among the first to call for a more explicit linkage of risk to the management of large-scale engineering projects. The outcomes of these efforts speak for themselves. Biery [97] documented cost and schedule growth for several hundred different kinds of projects and mixed portfolios over the course of several decades. He found that in large, complex, socio-technological systems, cost and schedule growth was more often the rule than not. For example, US DOD programs averaged about 40% schedule growth and approximately 50% cost growth [97]. From an enterprise perspective, since the 1970s, total budget overruns for DOD system development of at least 30% have been the norm and are increasing [98]. Nevertheless, drug improvement projects, electricity generation projects, and mining projects, to name a few, experienced even greater cost and schedule growth than did US DOD programs, sometimes up to 500% [97]. Similar findings using different data sets have been produced by Flyvbjerg, et al [99] and Miller and Lessard [25].

The GAO is currently encouraging better portfolio management for the DOD as a way to deal with the inherent risks and uncertainties encountered in weapon system development [100, 101]. Furthermore, the GAO highlights the portfolio impacts of risk as one that will result “in a reduction of the department’s buying power” [95]. Managing risk together with portfolio management is now the overriding mantra coming from the GAO [95, 98, 102] and also RAND [40, 103-105]. Both organizations are largely silent on exactly what constitutes portfolio management or which portfolio management practices in particular the DOD should be focusing on, but they often cite many of the same product portfolio management literature previously reviewed.

To provide further background, within the DOD, there are three key processes that interact with one another in weapon systems development. Together, these are coined as the Big “A” of Acquisition. All three of the processes are implemented by the United States Air Force according to its interpretation of the policy guidance received from the DOD [10]. The first of these processes is the manner by which

the end-user or the war fighter determines requirements that need to be fulfilled as a product of the acquisition system. This process is called the Joint Capabilities Integration and Development System (JCIDS). The next process is the one by which the Department of Defense prioritizes and funds all of its ongoing activities. It is called the Programming, Planning, Budgeting, and Execution process or PPBE for short. The last process is called Acquisition, (coined little "a" by some), also governed by joint regulation, and has been the subject of most studies and direct criticism over the years [3, 4]. The Air Force processes are different in their form and operation from the other services. A more detailed explanation of the Air Force version of these three processes follows below. For one of the most complete and detailed examinations of the overall acquisition process, from a Defense Department perspective, including a short modern history of acquisition in defense, please see the CRS report for Congress updated on June 18, 2008 [106]. The AFIT thesis by Elkins [107] also contains one of the most thorough reviews of historical aspects of the acquisition of weapon systems from the late-1700s to the present-day.

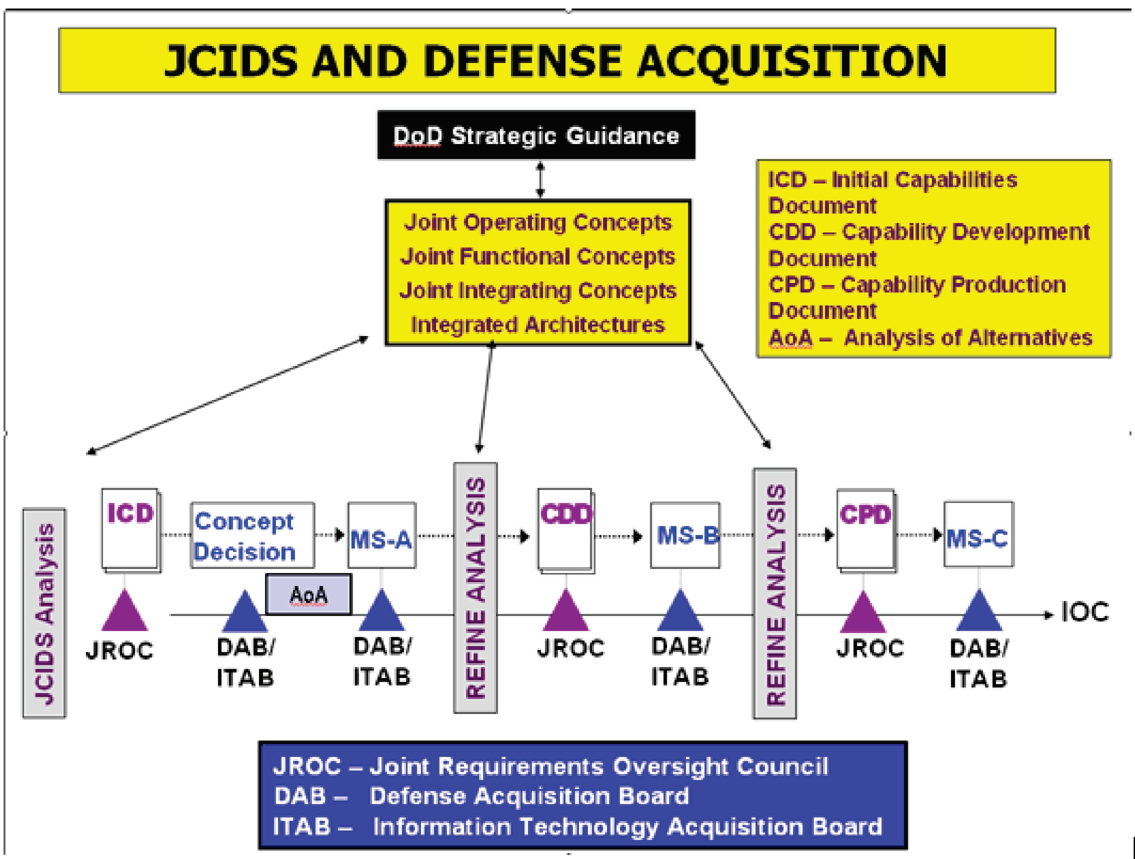


Source: Defense Acquisition Performance Assessment Report. February 2006, p. 4. [106]

Figure 2: The Total Acquisition System

JCIDS

JCIDS is governed by a Chairman of the Joint Chiefs Of Staff Instruction 3170.01E that lays out the overall process by which new material requirements are expressed, prioritized, and inserted into the formalized acquisition system. It "involves an analysis of Doctrine, Organization, Training, Material, Leadership and Education, Personnel and Facilities (DOTMLPF) in an integrated, collaborative process to find gaps in war fighting capabilities and propose solutions" [10]. Several levels of analyses take place in the early JCIDS process. Most times this process generates changes in policy or changes in the use of existing items. However, when a material need is identified, it kicks off a whole series of events that culminate in the final development and acquisition of a system that requires the interaction of JCIDS, PPBE, and Acquisition. This 'series of events' is depicted by the figure below.

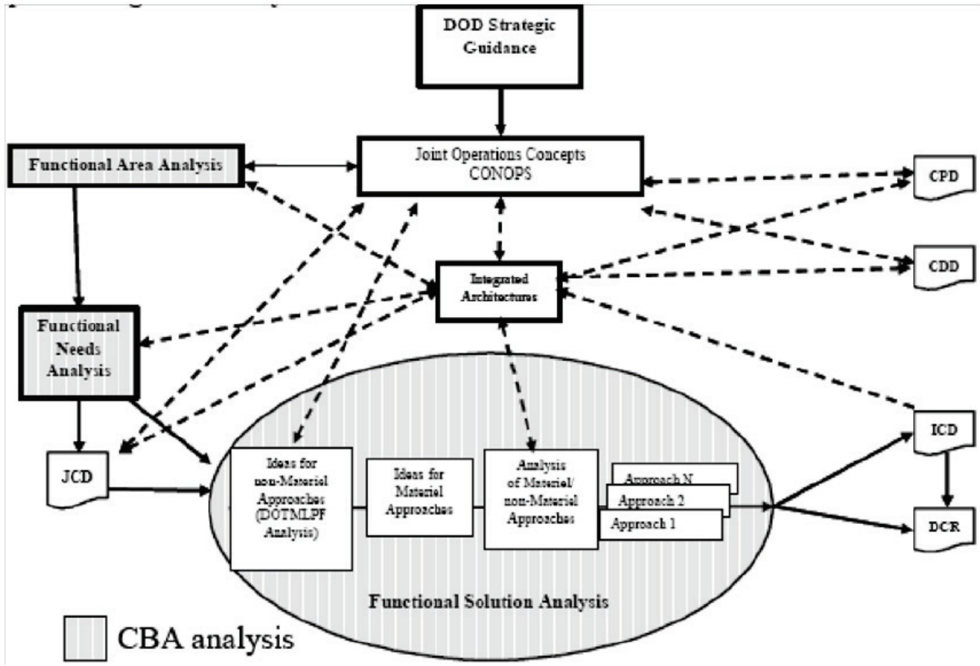


[10]

Figure 3: From Chapter 1.3 of the Defense Acquisition Guidebook[1]

[1] JROC = Joint Requirements Oversight Council; AOA = Analysis of Alternatives; IOC = Initial Operating Capability

The decision-making portion of JCIDS and the Air Force application of JCIDS are remarkably similar to a stage gate structure. Over a period of time as an idea or concept matures and gains definition, a series of reviews is held to determine if the concept should go forward, or if there is money available to fund the concept, or to assess risk or other concerns with a program. Each major command is given the latitude to determine how to develop and select the needs and/or requirements for consideration across the Air Force. For instance, in one command, the process is very formalized as a concept goes from the lowest levels of the departmental organization, from the originator to the division chief level and up through the process until reaching the actual General running the MAJCOM. Once completing the MAJCOM hurdle, the stated need or requirement then is sent out into the at-large Air Force process. The Air Force process is structured so that it should only take 21 days for a complete review to be done [108]. During those 21 days, all of the other MAJCOMs and interested organizations are given the opportunity to review and comment on the original MAJCOM's idea or request more information. Built into this process are ways to gather and resolve comments and concerns about a MAJCOM's idea. A dated but still valid description of the process in an older form was described by an earlier effort [109].



Source: Figure A-2, CJCSM 3170.01C, May 1, 2007.

[106]

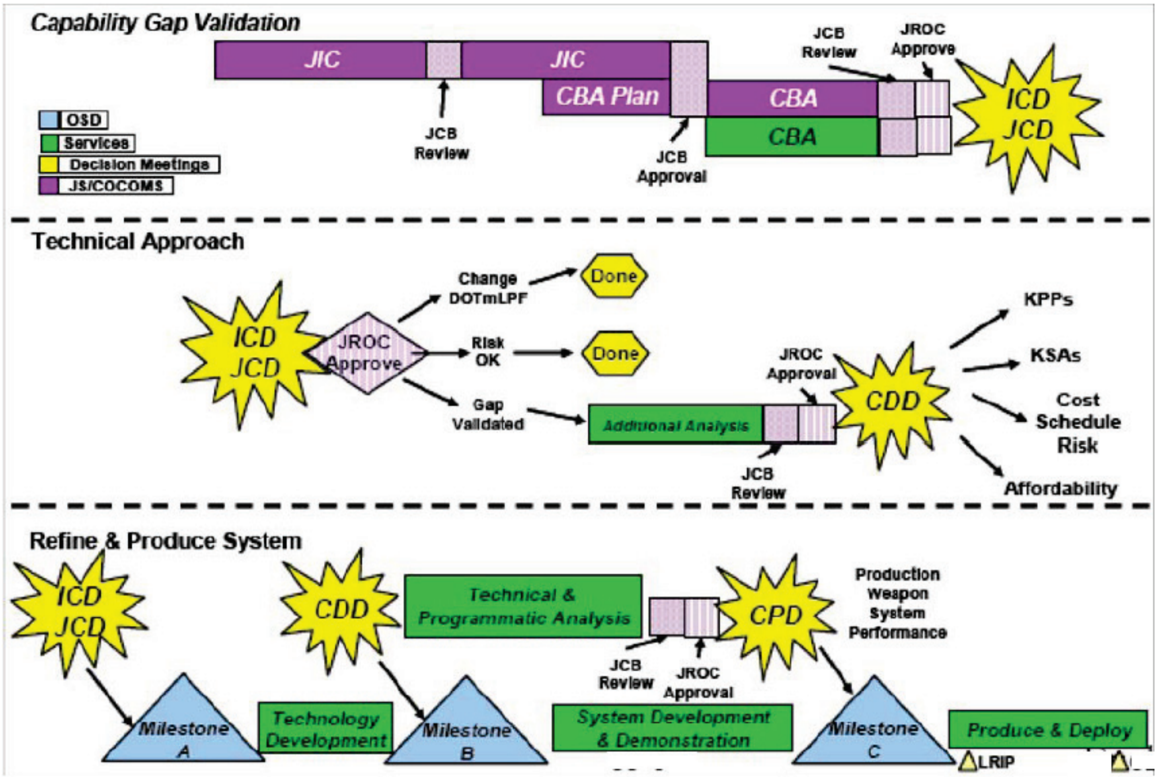
Figure 4: Relationship of Strategic Processes with JCIDS[2]

The previous two figures give some insight into how JCIDS operates. After an analysis is performed, several types of documents can be its product. The first document is called an "Initial Capabilities Document." This document is used by the acquisition system to guide the development of an early acquisition program culminating in a stage gate review called "Milestone A." Another document is the "Capability Development Document." Any associated development using this document as a guide culminates in a "Milestone B Decision." Finally, the last major product of JCIDS would be a "Capability Production Document." This document outlines the requirements for the final stages of development of the material solution. The culmination of any development activity results in a Milestone C Decision and permission to proceed to a final decision on final production, fielding, and sustainment.

[2] JCD = Joint Capability Document; DCR – not applicable

Scattered throughout this process are several analyses and dedicated events that study and analyze proposed concepts versus a documented need. These are noted simply as JCIDS analysis or as a more formal analysis called an "Analysis of Alternatives" or may be just a refinement of previous analyses. Between the analyses events and the approval of these documents, JCIDS not only outlines the process by which these documents are generated and approved, it also allows new developments to be inserted at any time along this process (and into Acquisition) as long as the appropriate requirements document is in place.

The Air Force application of JCIDS is covered by a series of Air Force policy documents and instructions. The most relevant is AFI 10-601, Capability Based Acquisition [10]. The following figure shows some of the relationships between and ties to the Acquisition system, detailed later in this chapter. The connections between JCIDS and the financial system of the Air Force are assumed to exist at this level of detail and are not relevant to the discussion at this point.



Sources: Defense Acquisition Milestones from the Defense Acquisition Guidebook, [http://akss.dau.mil/dag/DoD5000.asp?view=document] . Requirements interface from page A-5 of CJCSI 3170.01F, 1 May 2007.

[106]

Figure 5: Connections between JCIDS and Acquisition[3]

Upon closer examination, there are nuances to the JCIDS process. For instance, the Department of Defense exerts some authority over the approval of requirement documents, especially as their cost estimates increase or have high visibility or high interest. The highest level of scrutiny is titled "JROC Interest." This means that the Joint Requirements Oversight Council (JROC), consisting of the Vice Chairman of all of the armed services, must approve the documents. Typically, these are reserved for ACAT[4] I programs and a few ACAT II programs – but they reserve the right to approve any program they are interested in. A discussion about ACAT levels occurs in Appendix D. The second category is called

[3] OSD = Office of the Secretary of Defense; JIC = Joint Integrating Concepts; CBA = Capabilities-based Assessment; JCB = Joint Capabilities Board; KPPs = Key Performance Parameters; LRIP = Limited-rate Incremental Production

[4] Acquisition Category

"Joint Integration." These are mostly those that have some joint components, such as software or architectural elements shared among the services. In these cases, the AF still approves them, but must also ensure the rest of the joint community knows about them. The last category is called "Joint Information." These are typically programs that are only done by one service and clearly fit into the roles and mission of only one service. These are usually ignored by the rest of the services. Within this discussion, it is important to note that in the two categories that the AF retains approval authority on, the level of the approval authority changes depending upon the ACAT level. The most expensive and visible AF programs will always be approved by the Chief of Staff of the Air Force. Other types of programs will be approved by different staff elements within the Headquarters of the USAF. The table following, taken from AFI 10-601, shows how this is differentiated.

	JROC Interest			Joint Integration			Joint Information Independent		
	ACAT I	ACAT II	ACAT III	ACAT I	ACAT II	ACAT III	ACAT I	ACAT II	ACAT III
Air Force Validation	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC
Joint Staff Validation	JROC	JROC	JROC						
Joint Staff Approval	JROC	JROC	JROC						
AF Approval				CSAF	A3/5	AF/A5R	CSAF	A3/5	AF/A5R

[108]

Table 1: Table of Validation and Approval Authority[5]

Beyond the major categories used for programs as noted above, there is also a grey area in system development activities where changes or modifications to existing programs or fielded systems do not fit into any of those previously described categories. The Requirements process has guidelines to assist project officers determining how these changes are implemented. These guidelines are summarized in the table below taken from AFI 10-601.

[5] AFROCC = Air Force Requirements Oversight Council; CSAF = Chief of Staff of the Air Force; A3/5 = Combined Air, Space and Information Operations with Plans and Requirements; AF/A5R = Requirements Branch of A5

Modification ($) Amounts	Requirements Document	Approval Authority
< 10% of ACAT II Minimum Thresholds * & < $30M total expenditure **	AF Form 1067	Lead MAJCOM & PM
< 10% of ACAT II Minimum Thresholds * & > $30M total expenditure **	AF Form 1067 with RCT for KSAs & Attributes (use CPD RCT format)	HQ USAF/A5R
> 10% of ACAT II Minimum Thresholds *	ICD, CDD, CPD	See Table 2.1.

* Consideration must be given to both RDT&E and procurement amounts

** Total dollar amounts are based on FY 2000 constant dollars

[108]

Table 2: Modification Thresholds (Financial Thresholds)[6]

Simply put, the less money required, the less formality is also required. However, despite the small percentages noted above, these amounts can become quite substantial. Smaller amounts can be approved by the Major Command (MAJCOM) and the program manager for the acquisition (PM). Larger programs receive more scrutiny and must be approved at the HQ level. Beyond a certain threshold, programs must follow the more formal and proscribed format discussed earlier.

Finally, there are some additional caveats placed upon JCIDS materials, depending upon the community that will be the recipients of the new materiel solution. The following table highlights these relationships.

[6] AF Form 1067 = Modification form; PM = Program Manager; RCT = Requirements Crosswalk Table; RDT&E = Research, Development, Test and Evaluation

Certification/ Validation	JROC Interest	Joint Integration	Independent/ Joint Information	Documents
Threat Validation	DIA	DIA	Service	JCD, ICD, CDD, & CPD
Intelligence *	JS/J-2	JS/J-2	-	JCD, ICD, CDD, & CPD
Insensitive Munitions**	JS/J-8	JS/J-8	-	CDD & CPD
Interoperability & Supportability	JS/J-6	JS/J-6	-	CDD & CPD

* For programs that consume, produce, process, or handle intelligence data

** Applies to munitions programs only

[108]

Table 3: Document Certification/Validation Authority[7]

Each of the different types of documents tend to take different amounts of time to approve depending upon how many stops and certifications or validations are required to proceed to the next step. The Air Force's requirements policy organization, for example, publishes a "regulatory goal" best case, "realistic" or most likely, and "pessimistic" or problematic timeline for staff officers to use to plan on for approval actions [110]. The differences in schedule outcomes can be between 100 to 200 days between best case and worst case environments.

Although JCIDS is a separate process, it is not completely isolated. It must interact with the PPBE as well as the acquisition system. These interactions can be both trivial as well as very important. For instance, some of the forward progress as defined by the JCIDS is dependent upon activities that are completed or done outside of JCIDS, e.g., if no funding for an analysis activity is available, then the process waits until money is obtained from another process. If these outside activities have not been

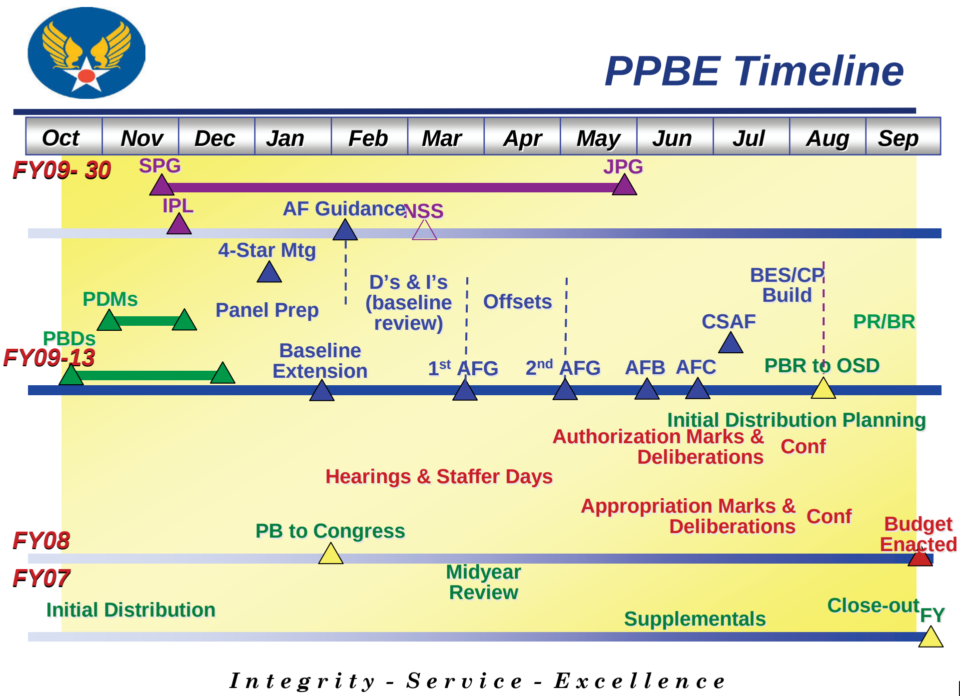
[7] DIA = Defense Intelligence Agency; JS = Joint Staff

accomplished, the system must either wait or try to press ahead hoping that the information does not change along the way[8].

PPBE

The Programming, Planning, Budgeting and Execution (PPBE) process is how the entire Department of Defense, including the Air Force, budgets and pays for all activities. The PPBE is different from the other processes within the big “A” of the DOD acquisition system in that it is a continuous process that is calendar-driven, versus the others being event-driven. Introduced in the early 1960s by Robert McNamara, the PPBE is a systematic approach to the planning, budgeting and spending of funds for the Department of Defense [10]. Over time, the PPBE has undergone many changes and currently has evolved into a process on a two-year cycle, preparatory for inclusion into the President's budget submission to Congress. Practically, this means four different budgets are in the “system” at any given time. In walking through the process from the beginning, the first year of this cycle is spent largely at the MAJCOM level planning and preparing a budget and budget forecasts. The second year is largely spent reconciling the various budget submissions from the different MAJCOMs into a coherent single submission from the Air Force that the Department of Defense will use in reconciling and creating the overall Department of Defense budget request to OMB. The third year is when Congress debates the proposed budget and the fourth year the budget is being executed or spent. See the figure below.

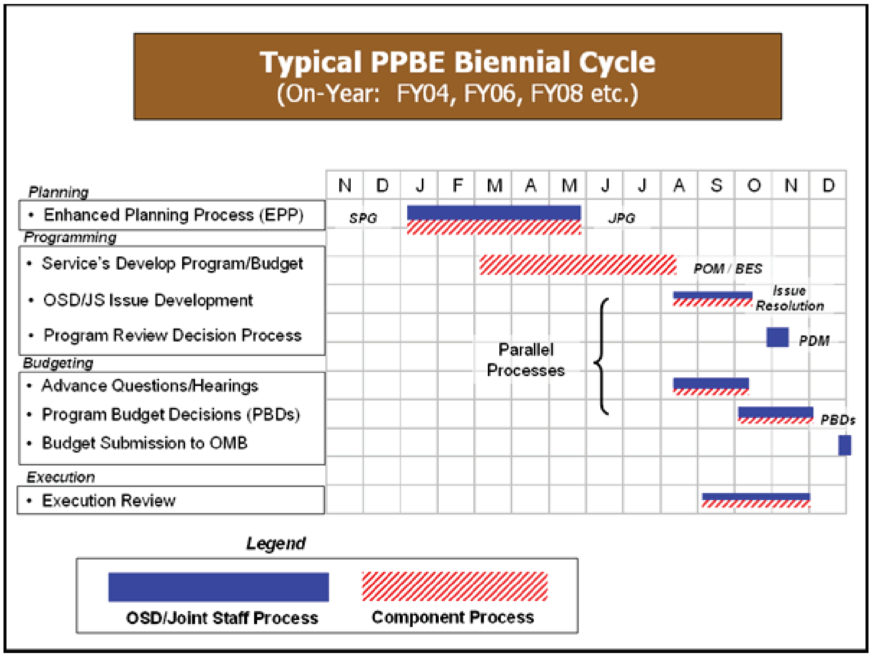
[8] Some may suggest that these behaviors are actually portfolio behaviors without being identified as such. This is true. However, there is a concern that the essence of portfolio management is diluted and/or lost in the multi-layered and semi-accountable hierarchy attached to the aforementioned processes within the US Air Force.



[111]

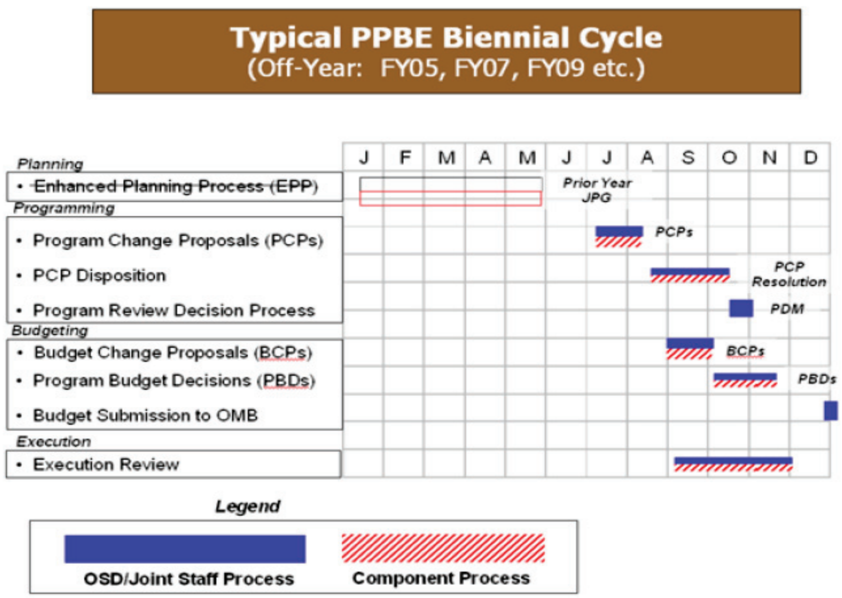
Figure 6: PPBE Timeline

In an attempt to make the process more responsive, several years ago the concept of an "on" year and an "off" year was introduced, where during the off year, the planning and budget development would be abbreviated to address only major changes [10]. The first figure shows the "on-year." The second shows the "off-year."



[106]

Figure 7: "On-year" PPBE schedule



Source: Defense Acquisition Guidebook, Chapter 1.2, [https://akss.dau.mil/dag/Guidebook/IG_c1.2.asp#Figure2].

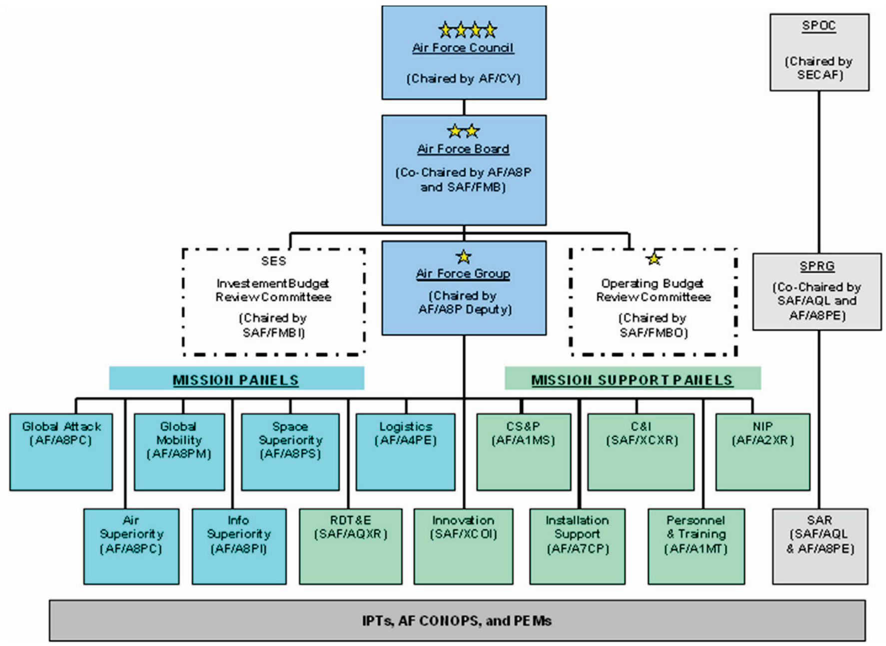
[106]

Figure 8: "Off-year" PPBE Schedule[9]

[9] PDM = Program Decision Memorandum

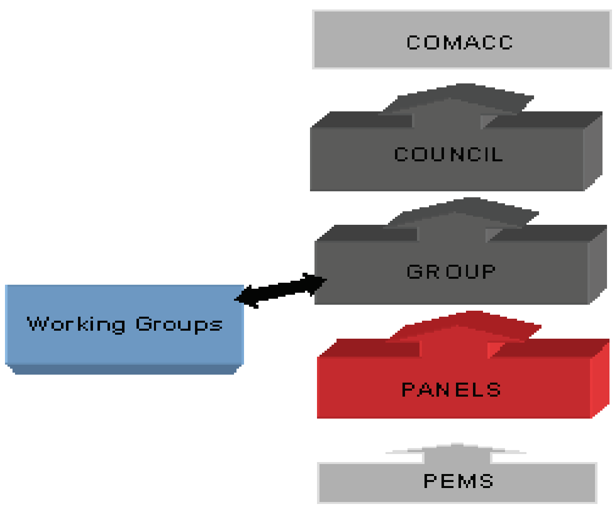
As mentioned earlier, the process typically “starts” at the lowest level possible – that of a MAJCOM planning activity. Oftentimes, this process will begin six months or more prior to the listed official timetables. And, since the process duration is at least two years, the “start” of a cycle begins each year. During an “even” year, also known as an “on” year, a “new start” program may be put into the budget request (or Program Objective Memorandum (POM)). During the “odd” years, also known as the “off” year, no “new start” may be made. A previous version of the process allowed the services to submit an amended POM or “APOM” but this has been eliminated in the recent years. However, Program Change Proposals (PCPs) and/or Budget Change Proposals (BCPs) may be made to address fact-of-life changes, “broken glass” or to fix things gone horribly wrong.

Within the Air Force, Air Force Instruction 16-501, is the governing document. It lays out how the Air Force will accomplish the building of the proposed Air Force budget. A corporate planning process consisting of councils at various levels is used as a way to review, validate and approve the various budget aspects within the Air Force [112]. It starts off at lower levels in forums that are run by Colonels working its way up to higher and higher venues, whose membership consists solely of those of senior rank such as four-star Generals. A small army of accountants and financial managers exist in the background to pull all the pieces together, make the necessary trades, and the hard decisions to be validated in these forums. The following figures provide some context. The first figure shows the overall organizational structure for the budget build. The next figure shows how one MAJCOM has tried to mimic the larger Air Force’s approach. The last figure shows notionally how the MAJCOM organization integrates with the Headquarters AF corporate structure.



[112]

Figure 9: The US Air Force Corporate Process[10]



[113]

Figure 10: One MAJCOM's corporate structure

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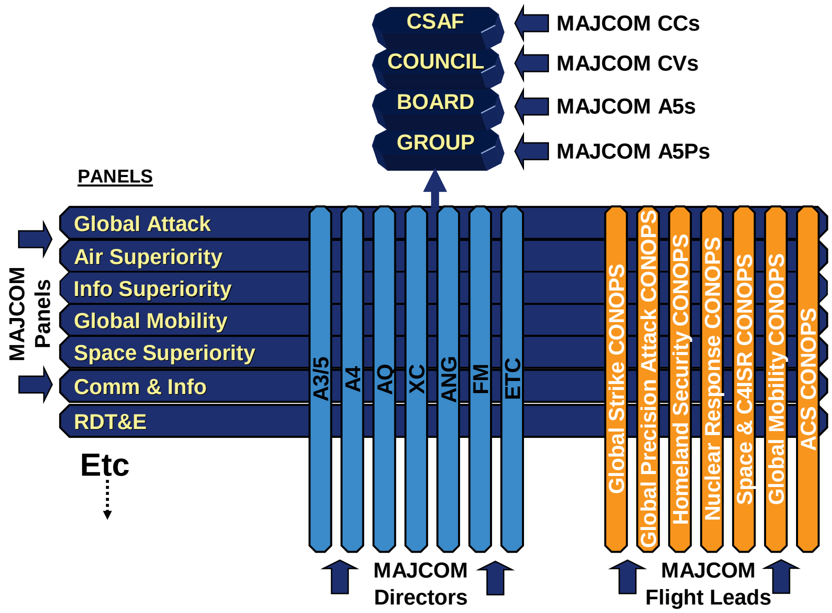
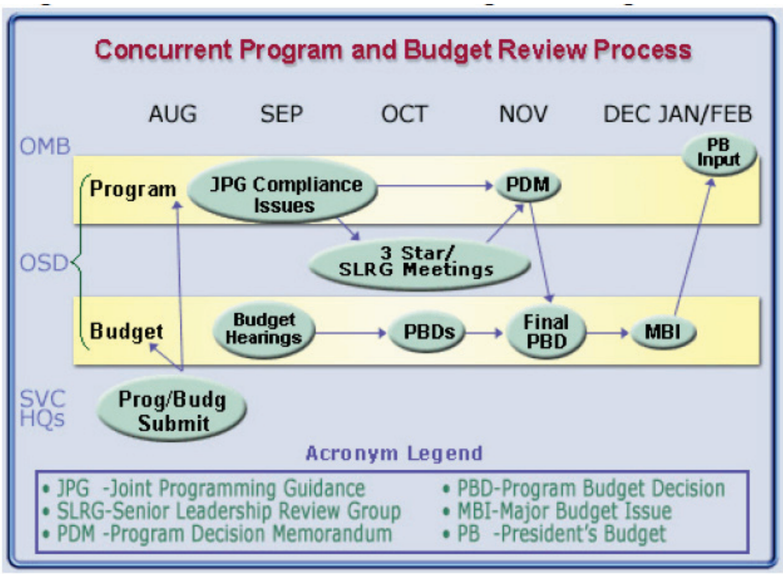
[10] AF/CV = Air Force Vice Chief of Staff; SAF/FMB = Secretary of the Air Force office of Financial Management and Budget; SES = Senior Executive Service; SPOC/SPRG/SAR = classified financial review system for classified programs; IPT = Integrated Product Team; AF CONOPS = Air Force Concept of Operation; PEM = Program Element Monitor

AF CORPORATE STRUCTURE
with MAJCOM and CONOPS links



there are still unresolved issues, these are known as Major Budget Issues that are left for the OMB to resolve as they prepare the President's budget. Of course, OMB is free to make changes to reflect the President's priorities and after submission to Congress, the Congress often makes significant changes to the budget.



Source: DAU PPBES Continuous Learning Course CLB009, [https://learn.dau.mil/html/clc/Clc.jsp]. **[106]**

Figure 12: Concurrent Program and Budget Review Process[12]

A program is considered "broken" or is called a "disconnect" if, during the course of the budget build, it no longer has the resources to execute the corporate structure's approved program plan [111]. An "offset" or "bill payer" is a program that has been identified from which monies can be taken to fix broken programs--a program of lower priority than the one needing the funds. An "initiative" is a program that is appearing for the first time and needs to be funded or reflects an increase in scope (requirements growth) from a previous budget. This could also be considered a new start, if a few other threshold criteria are met. Programs that are considered a new start also have considerable additional documentation required by Congress before any such program will be authorized.

[12] OMB = Office of Management and Budget; OSD = Office of the Secretary of Defense; SVC HQs = Service Headquarters

As mentioned earlier, there is a small army of dedicated people that are involved in the functioning of the PPBE. The most visible member is called a PEM, or program element monitor. The name comes from the individual line item in a program which is called a program element. These program elements are more detailed breakouts of spending activity that will occur and can be reserved for multiple programs, a single program, or even a single activity. It is the PEM's responsibility to keep in close contact with representatives from JCIDS as well as from the acquisition system. The user community, represented by officers and employees working within JCIDS, have a vested interest to stay on top of the state of the funding of their project or program as it goes through the system. From the acquisition perspective, the PEM is the person to whom the program manager is in constant contact to report that funds are being spent according to plan as well as to keep the PEM informed of any issues or problems that might be experienced by the program. These issues or problems might require additional monies, or monies to be shifted to different time periods to accommodate changes in schedule, scope, or other issues. Such shifting of monies can easily result in a program becoming broken, something that a PEM does not want to see happen.[13] A PEM also does not want to see his or her program become a source of money or an offset for paying bills. The PEM has the incentive to maintain the monies that have been previously allocated according to previously approved plans for a given program or system for which he or she has responsibility. A lot of deal-making and "horse-trading" occurs between PEMs to keep burdens low and avoid some of the required documentation--these deals are often brokered by others ranging from folks within JCIDS to those within Acquisition.[14]

[13] The attitudes or desires of a PEM are given here as part of the description of the PPBE. They are not necessarily documented but are listed here anyway in order to fully explain the operations of the system. The source of this information is based upon the author's experience and in fact is corroborated by interviews reported on in a later chapter of this work.

[14] Again, the behaviors reviewed in this section could be construed as portfolio behaviors. However, these behaviors lack the accountability and/or strategic or "portfolio-level" thinking that would be expected from a portfolio management system.

It is important to note that throughout the process, and especially during each budget build, the process essentially is considered starting from a blank sheet. This means that each and every program must re-justify its funding and its existence every year or face being put on the chopping block. This goes for well established, important programs, as well as for relatively obscure or new programs in the system. Furthermore, this re-justification occurs in multiple places at multiple levels in the system because, at each level of review, a program can be questioned again, and the justification process starts anew.

Just as programs are constantly scrutinized, at every level of the process exists the opportunity for insertion of new programs, additional spending, etc. Some of this comes from the commander's prerogative to exert influence on the budget--commander's at every level will do this--as well as expressed opinions from civilian leadership. Programs with the Chief's or the Secretary's interest usually emerge unscathed from the process outlined above.

Finally, at every level of command, usually there is an overhead cost--affectionately called "taxes"--that each program must pay. This means that an approved budgeted amount is not going to get to the program. It will always be less that what was budgeted.

During the execution year, the PEMs are interested in how well the money is being spent. There is an emphasis placed upon rates of obligation[15] and expenditure[16]. OSD usually sets goals depending upon the type of money being spent that programs try to meet during the year. If they fail to do so or spend money[17] too quickly, a program may be scrutinized excessively as a candidate to be a bill-payer.

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[15] Obligation means the government has committed to spend the money; exercised a contract option; awarded a bid/contract, etc.

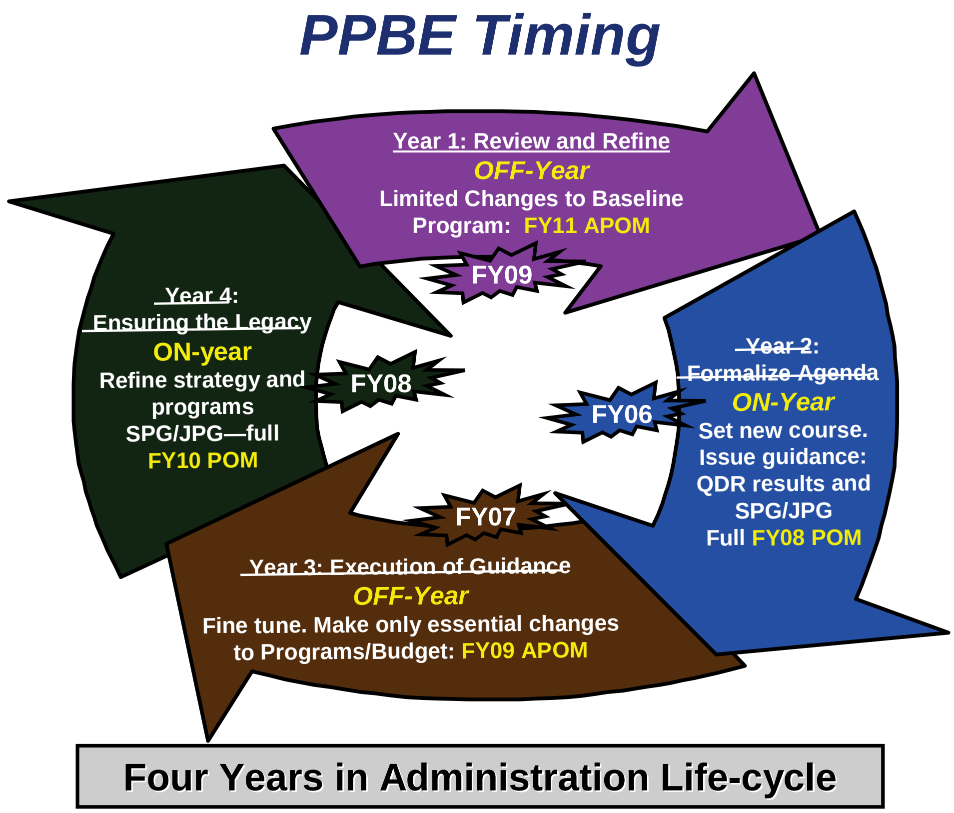
[16] Expenditure is when the money is actually dispersed from the Treasury.

[17] Moneys in the Air Force often come in different "colors." A color is simply a category of money that must be spent a certain way. Some money can only be spent on development items over a two year period. Other money can only be spent on operations and must be spent completely each year. So depending upon the "color" of the money, the length of time to spend the money may be different as well as what the money may be spent on at all.

It is in the PEM's, and almost everyone's, interest to spend money quickly--but not too quickly--over the course of the year.

Since PEMs are so closely tied to financial matters, they are often the first stop for those looking for bill payers. A PEMs job is often spent doing "budget drills" which often explore different scenarios in an attempt by the corporate structure to stretch dollars farther [111]. During these drills, the PEM is usually totally dependent upon the information they can get from the acquisition system – since members of the acquisition system are charged with the day to day operation of the program. However, the time available for a response is usually very small--usually less than 4 hours--since the PEM has a deadline himself that has to be met.

Politics has been mentioned previously in how it can inject turbulence into the plans and activities of many programs. Most people usually think of Congress or Generals exerting influence within the system. However, the DOD is part of the Executive Branch of government and over an Administration's term, the priorities within the DOD Budgets are shaped more here than anywhere else. The following figure illustrates this idea.



[111]

Figure 13: PPBE Timing[18]

With this understanding, a pattern of how and why certain decisions are made within DOD financial priorities emerges. All that remains is to execute the plans that are reviewed and approved. It also indicates how even in a long, drawn out cycle, there are ways to make adjustments when the political needs demand it.

Acquisition

This process describes how the military actually executes the development and sustainment of its systems. The process is governed by Department of Defense Instructions, the Federal Acquisition Regulations and other laws. In this subsection, the structure of Acquisition, the people, and the

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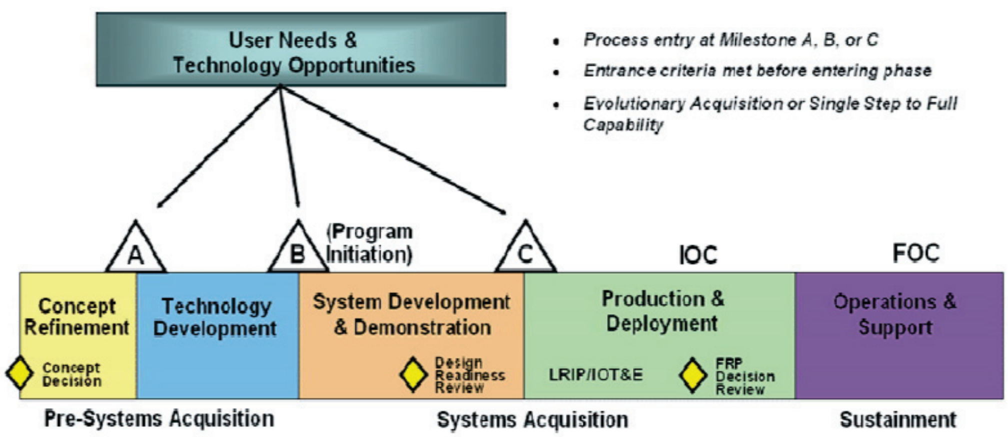
[18] APOM = off-year Program Objective Memorandum; QDR = Quadrennial Defense Review; SPG = Strategic Planning Guidance; JPG = Joint Planning Guidance

governance of the process will be examined. An overview of some of the studies and recommendations for this system will be presented in Appendix A.

The DODI 5000 series of instruction is focused primarily on systems acquisition in the DOD. As noted earlier by the DAPA Report, this system has received a lot of scrutiny and been the subject of a lot of criticism [3]. As noted by DAPA, the system typically has two or three major revisions per decade. The most recent was implemented in December 2008. This report is based upon the pre-2008 revision. Within the Air Force, AFI 63-101 lays out the structure and governance of the process.

The following diagram shows the acquisition system. It is broken up into five distinct elements, and has several milestones and important reviews built into the system. It also indicates how new ideas or things are inserted into the acquisition system can come in at any of the three milestones from outside of the process. Milestone B is considered a program start and that is the point in the PPBE it is acknowledged to be a program as well. This is when the program receives its individual program elements or budgeted line item.

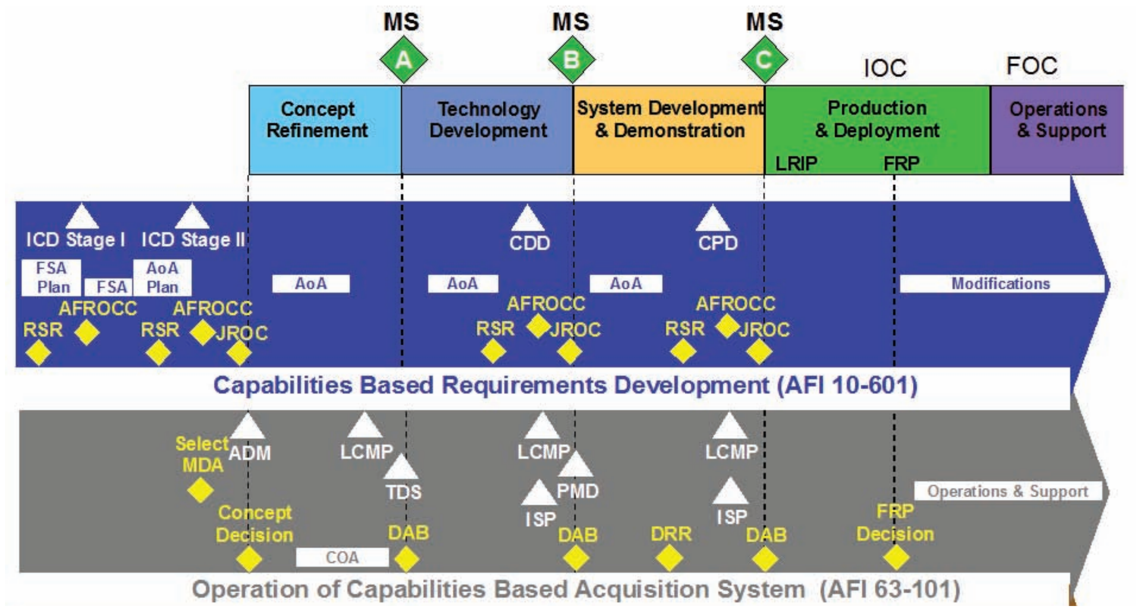


[106]

Figure 14: An Overview of the Acquisition System[19]

[19] IOT&E = Initial Operational Test and Evaluation; FRP = Full-Rate Production

Each service is given latitude to define and develop its own implementation of the acquisition system. As noted earlier, AFI 63-101 outlines the process by which the Air Force has implemented the acquisition system. It is called capabilities-based acquisition. The following figure shows how the Air Force implementation of both the requirements system and the acquisition system relates to the approved Department of Defense system.



[108]

Figure 15: Overlay of Acquisition and Requirements processes[20]

Regarding the execution of the acquisition system, the process in the Air Force is run by Air Force Materiel Command (AFMC), with the exception of space acquisition activities, which is run by Air Force Space Command. Most of the Air Force's scientists and engineers belong to AFMC. The command has responsibility for several product centers such as the Electronic Systems Center at Hanscom Air Force Base or the Aeronautical Systems Center at Wright Patterson Air Force Base. Acquisition activities are done at these centers, according to their area of expertise. The command is also responsible for the

[20] FSA = Functional Solutions Analysis; RSR = Requirements Strategy Review; MDA = Milestone Decision Authority; ADM = Acquisition Decision Memorandum; TDS = technology development strategy; ISP = integrated support plan; DAB = Defense acquisition Board; COA = courses of action; DRR = design readiness review; FRP = full rate production

Air Force Research Laboratories, which deal with technology development and technology transitioned to systems and development. Finally the command is also responsible for air logistics centers such as Ogden Air Logistics Center, where routine maintenance and modifications are done or managed on already fielded systems. Air Force Material Command, in essence has a cradle-to-grave responsibility for Air Force systems. Air Force Space Command has the same kind of responsibility for space systems, with a Product Center at Los Angeles Air Force Base, but collaborates with AFMC on many other aspects of acquisition, such as laboratories and logistics centers. The remaining discussion on acquisition will focus mainly on the AFMC organizational construct. The space acquisition organizational construct is not different enough to warrant any further specialized treatment.

Acquisition authority flows through the Secretary of the Air Force, who has a specialized staff dealing with nothing but acquisition. In some respects, there is a dual reporting structure that exists. For instance, the facilities, people and other resources are provided by Air Force Material Command. However, the authority to procure or develop a new weapon system comes through, the Secretary the Air Force and his/her acquisition staff.

As part of many of the acquisition reform efforts, Congress demanded a more professional acquisition workforce, whether civil servants or uniformed personnel. Under the Defense Acquisition Workers Improvement Act, acquisition personnel are required to be trained and maintain competency in their specialization and particular job functions. Levels of proficiency and certification are awarded to employees who over time receive both experience and training to master the requirements of their particular job functions. Additionally, recent requirements have mandated that program managers of major programs must remain in their position until the system in development reaches its next milestone. All these improvements are designed to ensure continuity and minimize disruption in the development of systems.

The overall governance of the process begins at the DOD level, and authority is delegated from there. Service Acquisition Executives bear the responsibility for the Secretary of the Air Force to ensure that programs are being developed in accordance with current law and on schedule, and practicing good financial management. Program Executive Officers are responsible for multiple programs, and these people delegate acquisition responsibility to lower levels, until ultimately the authority is at the level of a program manager. The Air Force recently adopted a organizational structure that causes the military organization of wings, groups, and squadrons to be adopted to the acquisition workforce. Practically speaking, what this means is that the PEO is usually the center commander and has wing, group, and squadron commanders working for him or her. Program managers belong to individual squadrons. Although there may be two or three layers of management from a military chain of command perspective between the PEO and the program manager, the Air Force gets around this requirement by stripping various commanders of acquisition authority so that there is no conflict between the requirement of three levels of organizational separation between a program manager and a PEO. Program managers spend their time working mostly with the PEM in the financial system and requirements officers with the major command that is developing the system. The military chain of command within the program management process often concerns itself with coordinated answers to various requests for budgets or for budget drills or for "what-if scenarios" so that everyone from top to bottom of the organization is using the same points of reference and information.

The terminology of portfolios is often bantered about and used in various contexts within the Air Force. The PEO often talks about the portfolio of programs that he or she manages as well as different kinds of portfolios that might be platform-based such as the portfolio of F-16s, or a portfolio of different product types such as aircraft or space or cyber. Additionally, the portfolio terminology has also been applied at low levels to describe the bundling or the collecting of different reporting

responsibilities to a single individual based on the different programs that are part of that person's organization.

During the year the program manager is often required to report the progress that the program is making in its development. This happens in multiple ways. One is through the Monthly Acquisition Report, which is implemented in the System Metric and Reporting Tool, otherwise known as “SMART.” Then there are additional special reviews, called for instance, “the spring review” or “the fall review,” where in particular, the financial execution of the programs is scrutinized. It is at these reviews where monies can be redirected by higher headquarters to take care of issues elsewhere. A great deal of effort is put into preparing for these reviews so that a program puts its best foot forward in order to mitigate, as much as possible, the likelihood of funds being redirected. If a program is in need of money, it is also a good time for a program to make the best case possible for why it should receive money from other programs and have a detailed plan on how the money will be spent over time. In theory, at these reviews, the impact of the decisions that are made is looked upon from a portfolio perspective and not just at the impact to the program in question.

Contractors

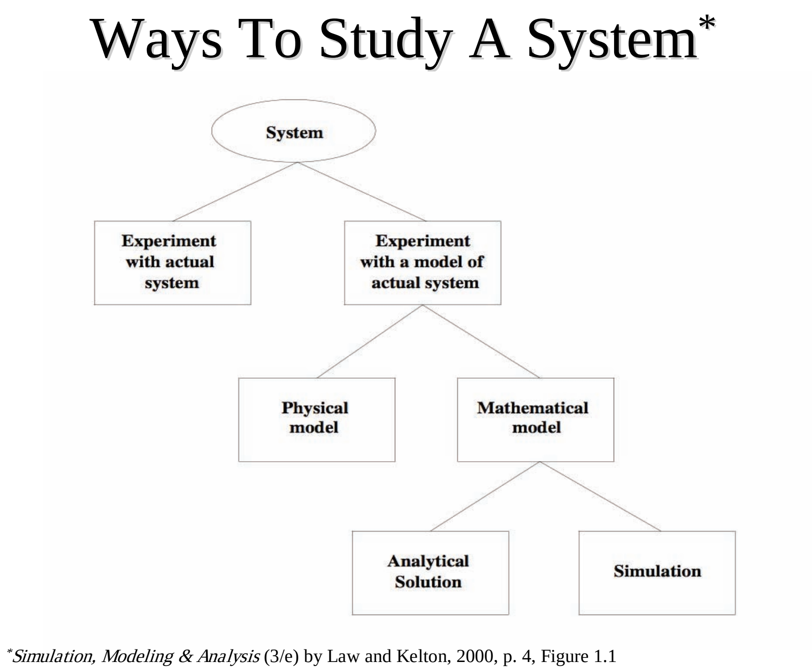
Private industry or contractors play an important part in the overall acquisition of systems. They are either working within the system as trusted agents of the government, or they are performing for the government a service, or delivering a product according to the terms of the contract that they have signed. For the purpose of this dissertation, contractors will be assumed to be those that are in a contractual relationship with the government to deliver a product or service and are not considered services and technical assistance or in a trusted relationship. In general, contractors have won a contract in a competitive relationship or because they are the only source for the expertise or the material that is needed by the government. They are driven by the profit motive and are incentivized to deliver according to the terms of the contract.

Much has been written about the attempts in acquisition reform to better incentivize and align the reward structure for contractors working in acquisition. There are many different contractual relationships that can be entered into ranging from cost reimbursements all the way through firm-fixed price with an award fee. Most of these contractual relationships deal with the degree of risk that the government is accepting or that the firm is willing to accept. In the past, there have been some abuses in the system and laws and policies have been put in place to try to rectify the situation.

However, a set of the more vexing issues that contractors deal with are the behaviors of the other pieces of the system. War fighters often want to insert new requirements or new ideas into the system and the contractor tries to be responsive to the desires of the customer. The acquisition system, on the other hand, may not have approved the additional scope of work or the new things being put into the system. And so oftentimes the contractor is left holding the bag or guessing what to do. Additionally, sometimes things happen, not according to schedule. Such a scenario may easily exist where a contract type has been improperly used for the type of risk involved, e.g. a contractor can find themselves in a situation that carries far too much risk than ought to be carried by the contractor. Another scenario is that they run out of money to do the work that they have agreed to. Sometimes running out of money is a function of being too competitive in the bidding process and undercutting what they could actually do, or it can be a consequence of unexpected and unexplained problems that arise during the course of the development system. Project management literature is full of all kinds of examples of how to deal with risk and uncertainty, as well as project planning and execution. The contractors use these methods and skills to the best of their abilities while working within the peculiar constraints of the government system. Sometimes these systems clash and contractors usually have to make the process work regardless. In particular, this clashing occurs in the internal portfolios that a company has and the way that individual programs are staffed or resourced accordingly.

Modeling and Analysis

Considering the topics discussed in this literature review, an important step to consider is how to represent the system and by what means the system should be studied in greater detail. There are different ways to study a system of interest. The following figure illustrates this idea.



[114]

Figure 16: Ways to Study a System

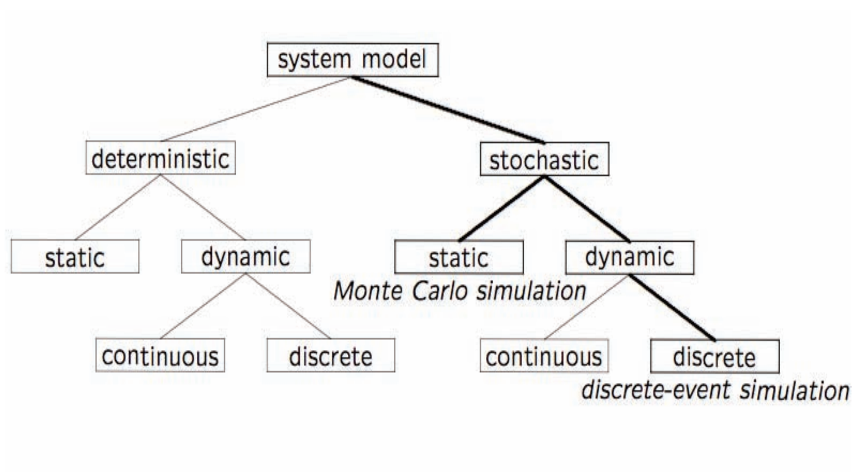
Considering the area of interest, experimenting with the actual system can quickly be ruled out for various reasons, which would include lack of time, money and resources. Therefore a logical next step is to explore developing a model.

A seminal piece of literature authored by Browning [18] pulls together the concepts of modeling and product development. According to Browning "a model is an abstract representation of reality that is built, verified, analyzed, and manipulated to increase understanding of that reality. Models can reside in the mind (mental models) or be codified" [18]. In this paper, the authors indicate that although a great deal of literature exists on process modeling, there is not a lot of literature on process modeling directly related to product development. However, they do summarize a few of the key fundamental

propositions that "form the basis of product development process modeling theory" [18]. Additional insights include: because product development processes can sometimes be ambiguous, full of uncertainties and interdependencies, product development processes are extremely complex and challenging to model; processes can be better understood by examining the constituent parts of the process and their interactions; and the best a model can do is approximate reality--it will never be completely correct [18].

Still, the model needs to be characterized to best determine how to analyze or manipulate the model. Some of the questions that should be asked include: does the model contain stochastic components? Is time a significant variable? Does the system state evolve continuously or at only discrete points in time? [114]. Answering these questions will help lead to an appropriate form of analysis.

Model Taxonomy



[114]

Figure 17: A Model Taxonomy

A quick example of a deterministic model that is also dynamic and continuous would be a model of Newton's cooling law. An example of something that is stochastic, dynamic and continuous would be a model of a pizza oven with a random door opening and closing [114].

Park [114] recommends that when developing a model, there are three different model levels. The first level is conceptual in nature when the model is at a very high-level of abstraction and still contains ambiguity. The next level is called the specification level. This is defined by putting the model on paper and may involve equations or pseudocode. The last level is called the computational level, where the model is either turned into a computer program or uses a programming language for further analysis [114].

Choosing a framework in which to build a model oftentimes determines the type of analysis that is done. For instance, within product development, applying system dynamics, design structure matrices (DSMs), or queuing theory as a framework are viable environments to build a model [18, 23, 68, 84, 115]. Other models can be spreadsheet-based or can take advantage of statistical theories such as Monte Carlo simulation by using specialized software such as Crystal Ball or @Risk [116]. Any theory or method that might be used to gain insight or better understanding of a process would be considered an appropriate framework for use.

As mentioned earlier a model can lead to an analytical solution or can be simulated. Depending upon the model, there are some technical attractions to simulation. A simulation has the ability to: compress or expand time; control sources of variation; stop and review; and restore a system state [117]. Furthermore, simulation can help avoid errors in measurement, facilitate replication, and the modeler controls the level of detail [117]. There are all kinds of simulation software packages on the market today that the modeler can choose from. These come with different features and are oftentimes tailored to specific applications of the theory or thing being simulated [118].

One of the last things required to finish building a model of any kind is the verification and validation of that model. Verification simply helps answer the question if the model was built correctly. In other words, the computational model should be consistent with the specification model [114]. Validation, on the other hand, answers the question if the right model was built. In other words, the computational model should be consistent with the system being analyzed [114]. In both cases, interactive graphics can prove to be a valuable part of the verification and validation of the model [114].

Summary of Literature Review – Key Take-aways

This chapter has looked at the product development literature with respect to many of the managerial aspects of developing new systems. Looking through this very specific lens, considering the ideas of risk and its importance, coupled with the notion of portfolios in product development, suggests another way to look at the larger picture of multiple development activities occurring across an enterprise. Furthermore, product development enterprises contain a great deal of complexity with multiple processes operating at once. Within the Department of Defense, and in particular using the Air Force as a surrogate, the literature has shown how the Air Force, over time, has tried to adopt much of the literature related to product development and best practices such as stage gates and portfolios, while tailoring these ideas to their needs and experiences. Nevertheless, the literature documents its system remains plagued with many issues of performance in terms of cost and schedule of its development activities, as do many other enterprises. Finally, the literature is clear that construction of a model, when properly done, has the potential to shed a great deal of insight and further understanding on the behavior of systems such as the US Air Force's acquisition system.

CHAPTER 3 - ACQUISITION

The Acquisition piece of the US Air Force process of developing new systems was identified early in the literature search as having a great deal of research done on it. However, no literature had been identified about the application of the ideas of risk within the portfolios of development. Furthermore, despite the existence and the proliferation of risk and portfolio methods, improvements in PD outcomes for large, complex systems, has not materialized. To find evidence about PD outcomes and to better understand portfolios and enterprise risk, an exploratory study of portfolio leaders was undertaken at one of the US Air Force's Product Centers[21]. The design of the study rested upon the analysis of semi-structured interviews of these aforementioned leaders.

From an analysis of the literature, an ideal portfolio should be able to do three major things guided by overall strategy. These are first, maximize return on investment as bound by capacity, secondly, maximize portfolio throughput or minimize the age of the money tied up in the portfolio, and thirdly, minimize cycle time, as well as minimize cycle time variability. Likewise, the ideal portfolio manager should have true gatekeeper functionality, where they can start, stop, and throttle programs; exercise control over the requirements; and have complete control of resources. These capabilities are "levers of control" that leaders have to wield influence and authority.

As noted earlier, portfolio management is the preferred method to manage product development in the US Air Force and is diffused down the hierarchy of acquisition leadership--through

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[21] The Air Force Product Center follows a classic top-down organizational tree. There are four levels in the hierarchy. The lowest level (Level III) is a Squadron commander or equivalent, responsible for two or more programs or efforts. The next level (Level II) is led by a Group commander or equivalent, with the next level (Level I) led by a Wing commander or equivalent. The top level (Level 0) is the Center commander. This particular AFB has 5 Wings or equivalent organizations (Level I). Each wing contains 3 to 5 groups or similar organizations (Level II) and each group contains 2 to 6 Squadrons or similar organizations (Level III). The respective number of groups, and squadrons, etc., assigned to each wing is dependent upon the number of projects being managed. A Wing (Level I) consists of about 1200-1400 personnel and manages more than 2 dozen major programs and several dozen minor programs; a Group (Level II) has about 400-600 personnel; and a Squadron (Level III) has 100-200 personnel, and so forth.

wing, group, and squadron commanders. It was hypothesized that understanding the capabilities of portfolio leaders would yield the most valuable and interesting information about acquisition outcomes.

The questions asked during these interviews were: “What is the current ‘state of the practice’ of portfolio management in the US Air Force? How is risk being used in portfolio management activities in the US Air Force? What behaviors or constructs can be observed in US Air Force acquisition that might be described as influenced by enterprise risk?” Other questions were asked about decision-making, surprises, dependencies between programs and other topics. Additional questions about job responsibilities, outcomes and performance measures were asked seeking specificity. Vague responses were met with follow-up questions. A representative sample of these questions can be found in Appendix B.

The format was an open-ended, semi-structured interview. Purposeful sampling was used in the construction of the interview set. This method was chosen since “portfolio” management is done by a limited number of individuals within the US Air Force. Allowance was made to accommodate and allow snowball sampling.

Interviews were limited to organizations that physically reside at the Product Center, which is the acquisition arm (e.g. product development center) for one of the US Air Force’s product portfolios. See the note above for an organizational description. 24 of 45 Squadron commanders (Level III leaders), 10 of 14 Group commanders (Level II leaders), and 4 of the 5 Wing commanders or their equivalent (Level I leaders) are located at the Product Center. Therefore, given the above ground rules and constraints, there were approximately 38 potential interviewees at this location. A total of 18 people were interviewed. Some interviews contained more than one person. The sample size represents 11% of all squadrons, 36% of all groups, and 75% of the wings assigned to the Product Center, or 21% of all

local squadrons, 45% of all local groups, and 75% of the wings physically residing at the Product Center[22].

Initial Observations and Analysis

Several key themes emerged from the interviews that cut across all levels of the hierarchy. These themes are money, personnel, or requirements, or some combination of all three impacting the outcome measures of individual programs, resulting in increasing costs and/or schedule slips.

Money is a key constraint for portfolio leaders. "Everything is really about the purse strings," opined a Group commander (Level II leader). By design, the government has placed restrictions upon the ways money can be used in programs. Most of these deal with preventing fraud and abuse. Some deal with the realities of fiscal policy and monetary/treasury realities. Many of the respondents were frustrated by not having more latitude to move money within their portfolio as needs required, or to even get the money expeditiously to their program personnel. " . . . we rely on a lot of other folks, particularly your MAJCOM, your air staff folks to get the money to come down," said a Squadron commander (Level III leader).

Personnel issues came up in two different dimensions. Portfolio leaders complained about the lack of people to fill key positions and/or the level of experience of existing personnel. " . . . we don't have all the right skill sets for the folks that are trying to run programs now. We have a lot of vacancies, or we don't have the right skill sets in programs," said one Squadron commander (Level III leader). A Group commander said, "It's the experience. And it really surprises me that we are allowing decisions to be made or [we are] making decisions based upon an experience-base that is not really, I think,

[22] A caveat to the product center's representativeness in this survey is that it is responsible for the development of software-intensive systems & very limited in complex hardware development, with a few exceptions. Some of these exceptions were included in the initial interview pool – maintaining a wide cross-section of PD types – while also providing for a "reserve" of other interviewees with the same kind of PD breadth for a later date, if the need arose.

adequate. I've got sharp, sharp people in here. Wonderful people but then I take a look and they don't have the experience."

This reality forces portfolio leaders to constantly evaluate and allocate manpower according to need. Said one Squadron commander (Level III leader), " . . . people you get are based on where they think the priorities are. You don't necessarily get the good ones if they don't think you're priority . . . " Another Squadron commander lamented, " . . . if they take my manpower, because then . . . I'm stuck, I have to focus on only my highest high-level stuff, my high-priority stuff."

The pressure upon personnel resources is exacerbated by instability among user priorities and requirements. Regarding priorities, a Group commander (Level II leader) shared this insight, " . . .the bottom line is it that at the end of the day that system is beholden to the user and the user only and it's their priorities versus the priorities of the enterprise that are going to win." Priorities and requirements are often intertwined and hard to distinguish. A thoughtful Squadron commander (Level III leader) observed the following:

> "I think the changing user and I won't just say requirements, because they don't even come as requirements, but fancies: 'I want to do this today.' 'I think that's a great idea.' Okay, in those great ideas, because if it is at the Pentagon and it may not even be the general who runs it, but his staff, when they have great ideas, it becomes like, you know, the 'birth.' It's . . . we're gonna shortcut everything and that's probably one of the biggest gripes I have, I'll tell you. We get considerable amount of re-taskings."

Another Squadron commander (Level III leader) said: "The user will redirect us, so we do get some of that, more time stuff, we'll redirect some of our resources to do stuff like that." Finally, the user may try to direct things more than they should. "There's a lot of folks who have good ideas on how to solve a problem, not just work the problem which needs solved and they tend to help us out with solutions as well as requirements and that's a struggle that we have on a regular basis," said one Group commander (Level II leader).

Within the portfolio structure, there were some issues that depended upon the level a leader occupied in the hierarchy. One example revolved around the perceived value of staff personnel. At

levels closest to the program work, there was doubt expressed about the value-added of these personnel. At higher levels, staffs were seen as a "last line of defense" to ensure accuracy of program information that would be reviewed at higher levels. One Squadron commander (Level III leader) said: "Working the staff, I think, is the hardest part. I think that is the most difficult part. The commanders, I think, they're pretty good, once you can get through their staff and get on their calendars."

Further, at higher levels of responsibility, commanders felt completely empowered to do whatever needed to be done to ensure portfolio success. Farther down the hierarchy, commanders felt more constrained. Upon closer examination, "completely empowered" might be too optimistic. All of them used words such as "influence," "shape," and "work with" to describe their portfolio capabilities. This was particularly true for high-visibility programs, ACAT I programs, or other programs under scrutiny by outside parties.

Another noted difference among the hierarchy was that the farther removed leaders were from the day-to-day work of individual programs, the more time they spent thinking strategically. The converse was true for Squadron commanders (Level III leaders). "Honestly we're focused on what inch-stones are this month," said one Squadron commander.

Another topic concerned the "value" proposition perceived by Squadron commanders (Level III leaders) and program personnel. Non-essentials seemed to be over-emphasized compared to program outcomes. Lamented one Squadron commander: "The fact that I haven't had my PHA [a health screening] or that I am late on gas mask training is a far bigger deal up the chain than whether or not one of my programs slip." Another Squadron commander echoed the same idea. " . . . there's so much, it seems, not associated with the primary acquisition mission that seems to carry a high level of performance, of measure, to determine your success."

Finally, these individuals were reluctant to indicate exactly how long a particular task or activity in the acquisition of a program actually took. Oftentimes their responses ranged from "it depends," to a very rough estimate. When pressed, the most these individuals would accede to was a range of time.

Data Coding and Analysis

In speculating about the root causes for these issues, it is clear that portfolio management and portfolio risk practices (knowledge of and use of) are variable and not standardized. The data reveals limited evidence of portfolio behaviors and little, if any, enterprise risk understanding.

Further analysis of the interviews was done through a coding process, wherein 92% of all those interviewed felt Portfolio Management was an “art.” 42% acknowledged having no portfolio-level vision or strategy although another 33% claimed to have a vision or strategy. 33% of those interviewed want portfolio-level measures, while acknowledging difficulty in obtaining such measures.

Portfolio capabilities were explained by referring to individual project outcomes: performance (requirements), cost (resources), and schedule (time) and extrapolating this information to the entire portfolio. Therefore, they were not articulated in any kind of formal measures, but in more vague terms. A Squadron commander (Level III leader) said: “For me, it’s done, it’s really done as ‘contentment’ among the portfolio . . . and if I have that good feeling, I’m satisfied with the direction of the entire portfolio.” A Group commander (Level II leader) suggested, “ . . . my folks really don’t have the ability to measure against their goals, other than saying I’ve got that vision or mission.”

Without exception, all affirmed the use of risk data as essential, but were often at a loss to describe exactly how it was used. 75% of those interviewed used traditional risk tools, e.g. risk cubes, mitigation plans, for individual programs. 50% used program-level metrics to help make portfolio decisions and 42% used “high-level” reviews to discuss risks of multiple projects--but without a structured process or integration of risks between projects. Most felt that these reviews were adequate

in vetting the highest-level risks among programs, but that it was not overall very efficient, e.g. time-consuming.

The concept of portfolio risk was challenging for many. Almost all interviewed had a different definition and understanding of portfolio risk and what it meant for them. Only 25% of those interviewed claimed to have a set of portfolio risks and one leader had an integrating contractor managing those risks[23]. 42% said limited manpower prevented the use of portfolio risk management and 33% felt that the structure of their organization inhibited portfolio risk management.

Further Discussion

Portfolio objectives within the Acquisition community of the US Air Force seem to be somewhat at odds with traditional portfolios. While it is true that portfolios serve as a categorization method, many of the current pairings of program to portfolio do not make sense. They often seem to have been made due to geographic proximity or budgeting categorization, not necessarily regarding a shared system commonality, a strategic vision or other typical portfolio objectives. While portfolio leaders are expected to live within the resources available, they have little ability to adjust resources accordingly. Further, portfolios are also used as a reporting vehicle where good news is spread quickly and widely and bad news is often kept "in house" as long as possible. Finally, emphasis is placed upon portfolio leaders to mentor the program managers in the art of program management. These are not necessarily bad things, but are also not representative of traditional portfolio management constructs.

In this environment, systemic constraints and organizational constructs doom the leader to mediocre portfolio performance. They have few effective levers of control to influence portfolio performance. They have little capability to prune the portfolio or to "throttle" the execution of existing

[23] The contractor was also interviewed. Although they had accepted the task of managing portfolio risks, determining those risks was proving to be very difficult & at the time of the interview, and after several months of effort, they did not yet have any portfolio risks enumerated.

programs, e.g. speed up, slow down. These controls are exercised elsewhere in the US Air Force. Although they may serve in gatekeeper functions with a great deal of responsibility--as a Source Selection Authority, Milestone Decision Authority, or to function as an Award Fee Designating Official, portfolio managers are limited. As a program advocate, portfolio leaders become reputation managers, lobbyists, and information conduits. Perhaps their greatest area of influence exists at the start of new programs because they carve out the initial team of personnel and resources until the official processes “catch up” with the new program. Perhaps the only lever of control totally within their purview is the contractual mechanism with industry. However, even this lever is constrained by financial pressures outside the control of the portfolio leader.

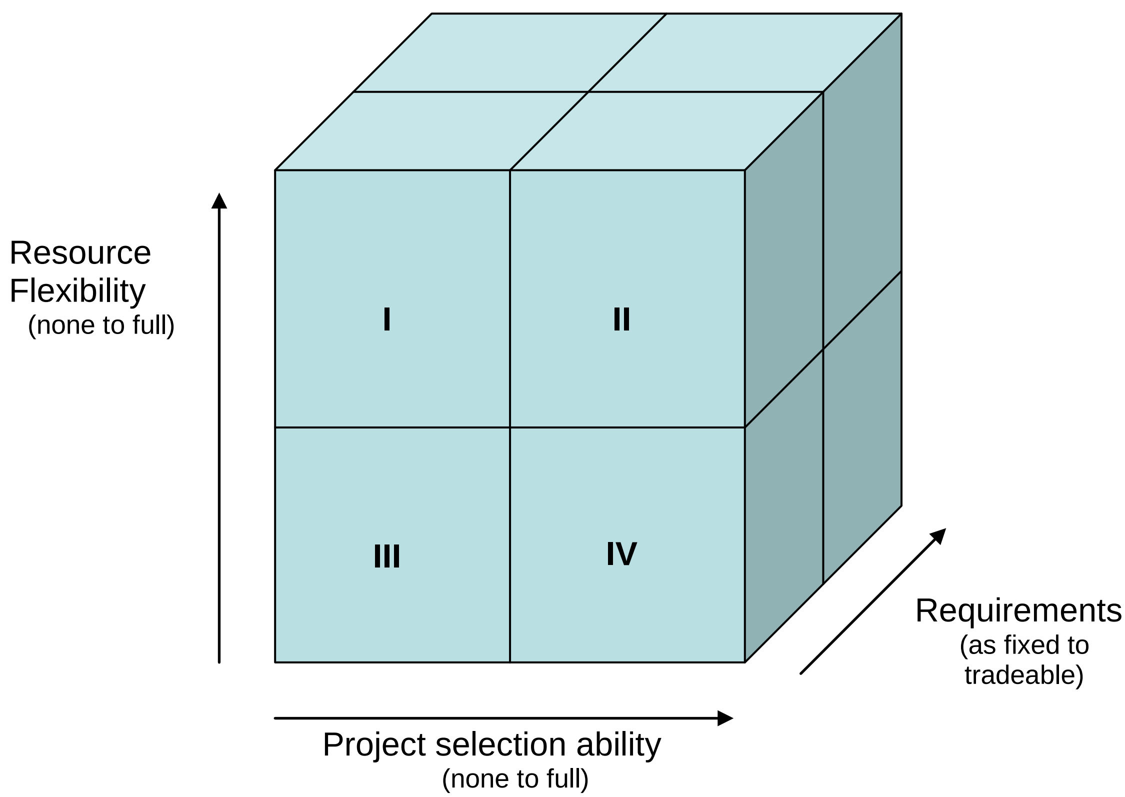

Figure 18: Portfolio Manager Capability Matrix

Based on the analysis of the interviewees from the US Air Force Acquisition system, Air Force “portfolio managers” lie squarely within quadrant three of the above diagram--severely constrained and largely ineffective in managing their portfolios.

The consequences of constrained portfolio managers become clearer. Rather than occupying the upper left quadrant, characterized by fully staffing uncertain projects (seed corn), keeping the number of projects low, and maintaining overcapacity in processes, money, and people, the Air Force does the opposite. Rather than occupying the upper right quadrant, characterized by minimizing projects in the pipeline, focused portfolio reviews and keeping a focus on project schedule, the Air Force exercises little discipline in these areas. Instead, chaos and firefighting[24] [119] in the development of systems is the result.

Observed outcomes are also different than what might be expected from a portfolio management process. Cost, schedule and performance data for programs--and by extension, portfolios--exhibit huge instabilities, trending in undesired directions. Mismatches in strategy between programs and the portfolio are common. For instance, portfolio vision and focus can be diluted due to the cacophony of stakeholder voices and system inputs at all levels. Using the McDonough and Spital [89] framework to evaluate portfolio performance, the US Air Force seems intent on "Operationalizing" all of the projects, e.g. all projects are developed and fielded, within its portfolio rather than adhering to a defined portfolio strategy, e.g. careful selection and pruning of projects in the portfolio, as well as not providing the tools, e.g. the levers of control, necessary to ensure portfolio success. The following figure illustrates the quadrant of activity where the US Air Force resides.

[24] Firefighting in product development is a term coined to describe the behavior of diverting important resources to solve unanticipated problems; being reactive in the development of a new product versus being pro-active.

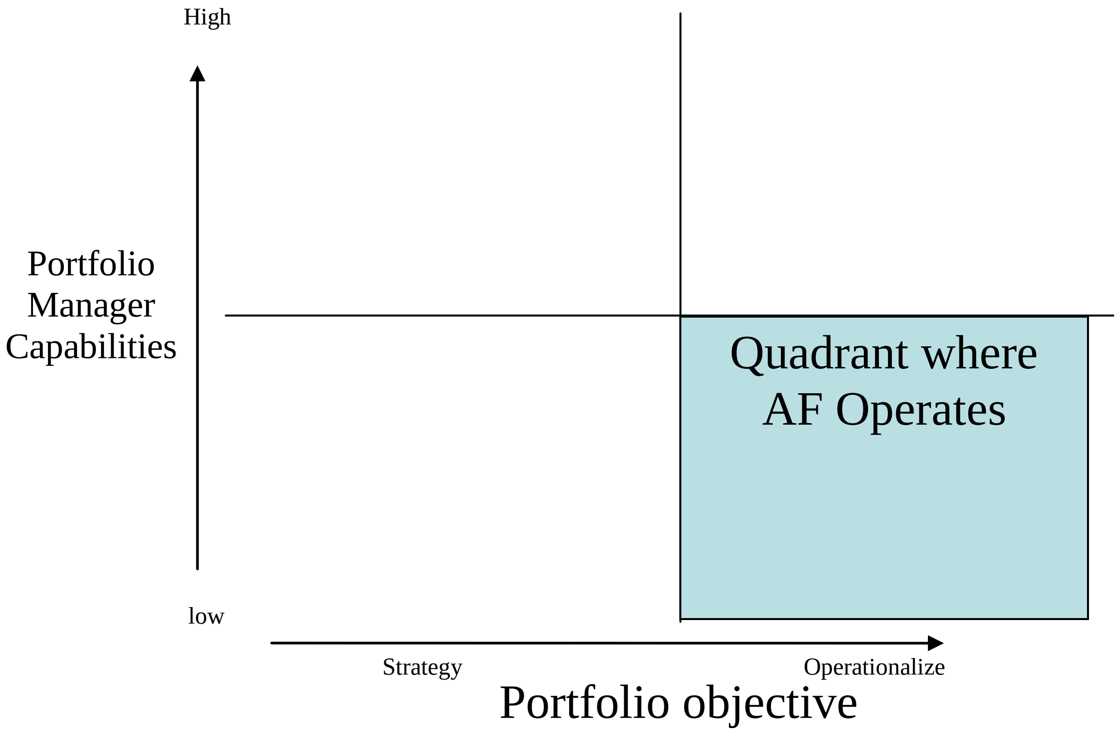

Figure 19: Portfolio Domain Space

Another dominant observation from these interviews is that portfolio leaders recognize everyone is working very hard. It would be easy for them to “blame” personnel for most of the cost, schedule and performance issues, but they do not. They recognize people generally have the best of intentions and their actions are often focused by the system towards local optima versus global ones.

Overall, the emergent themes are not especially surprising. They reveal resources, such as people, money, and requirements contribute to poor portfolio outcomes. In terms of “people,” there is a concern there are not enough of them to do the job or they do not have the proper skill set. Regarding “money,” it is highly constrained and bound by rules that are cumbersome. Finally, requirements are fluid, ranging from shifting priorities to re-taskings to preferred solutions. The consequences of these issues manifest themselves through schedule and cost growth. However, they are not necessarily the root cause. These themes reflect a system that is constantly in a fire-fighting mode, trying to keep every project going despite an apparent lack of system capacity required to

proceed. The result is programs that are constantly under financial and organizational pressures to do "more with less." Schedules slip and programs overrun their budgets.

Risk management practices observed are used at the project level with unsatisfying attempts to reconcile them to the portfolio level because it is hard to compare risks between projects. Current methods used appear to be very simplistic and not as robust as methods advocated by the literature or are in place "on paper" only.

Potential measures for further research

Clearly, enterprise risks are not easily articulated. However, several potential candidates can be postulated as enterprise or portfolio risks. Using the Stanke framework as a starting point, measures for agility, flexibility and alignment could be proposed [93]. What are potential portfolio measures for agility? Perhaps acquisition process capacity, borrowing concepts from queuing theory, and process capability, skills and depth of personnel, might be good surrogate measures. Flexibility? A measure of a "portfolio reserve" vs. total budgeted baseline, the percent of unused process capacity, and a portfolio leader's social network measures, such as centrality, might be good ways to measure it. Alignment? A subjective "measure" of all programs in the portfolio to the overall strategy or measuring the strategic priority of the programs in the portfolio might work for alignment. Much more work is required to fully develop these ideas further and is outside of the scope of this dissertation.

The bottom line is that measures such as these do not currently exist. Many of the data required to develop such measures are not even collected or are closely guarded. For instance, not one portfolio leader would divulge his estimated manpower requirements or his actual personnel numbers--only verbal acknowledgement that their manning was somewhere between 70% and 90% of what was "on the books." Overcoming obstacles like this will be critical in developing enterprise risk measures.

Conclusions

The “state of the practice” of product portfolio management in the US Air Force is poor compared to organizations recognized as implementing best practices. The design and execution of the current acquisition system is pre-disposed against portfolio leaders implementing portfolio best practices. Practices that imply enterprise risk management and portfolio management are used heuristically, at best. More often, where some of these practices are employed, they are used in a disjointed and disconnected manner by lower level portfolio leaders that remain aloof from the overall portfolio. In many instances, it is impossible to identify which “uber-portfolio” a system should belong to as many “portfolios” claim a system as an integral part of the larger portfolio. Enterprise measures are not in place. “Current-state assessment” of process capacity is not available; personnel and other resource shortages lie outside of the control of the portfolio leader. Outcome measures for the portfolio are based solely on individual project outcomes--not necessarily an “optimal” approach to portfolio management. It is very difficult for portfolio leaders to refuse taking on additional requirements. Portfolio objectives seem to be focused on being a vehicle to report on and categorize different projects or programs. Finally, in an apparent effort to mitigate some of the shortcomings of the existing acquisition system, portfolio leaders have been pushed out into the “field,” in order to be “closer” to those programs to enable mentoring of leadership personnel.

Nevertheless, critical thinking about enterprise risk is in a nascent stage within the US Air Force. Potential enterprise risk measures are not meaningful in their present form but have emerged as viable candidates for future study and hypotheses testing. Furthermore, this short study also suggests that most of the poor outcomes of the acquisition system can be attributed to factors elsewhere, outside of the boundaries of the system. Many of the pathologies plaguing program managers lie outside of their control. A larger systems approach is required to cover all of the causal factors of Acquisition outcomes.

Despite this bleak sounding assessment, acquisition still seems to do remarkably well given the constraints it operates under. Systems are being designed and developed to meet war fighter needs, even if the system tends to favor performance versus any other outcome measure. Whether these outcomes are a function of the capability of the personnel working in the acquisition system or sheer luck is more likely a testament to the dedicated people working in this system.

CHAPTER 4 -- THE OTHER PARTS OF THE ACQUISITION SYSTEM

Reflecting upon the major takeaways of the study of acquisition, including that many of the causal factors of the outcomes of acquisition originated outside of acquisition, it was doubly important to characterize and understand the other elements of the acquisition system. This chapter focuses on those two other parts, the financial system or the Programming, Planning, Budgeting and Execution (PPBE) process and the requirements generation system, otherwise known as the Joint Capability Integration Development System (JCIDS).

By taking the time to critically examine these two systems and characterize them, it was hypothesized that evidence of root causes of acquisition problems could be found by interviewing people working within these two systems. Perhaps the acquisition process discussed in Chapter 3 really was doing "well" given the constraints that it operated under. Therefore, a study, similar to the one discussed in Chapter 3, was organized to determine how these systems really operate and characterize them with an added emphasis upon the outcome measures of cost and schedule and the influence or impact that these two processes exert upon the other acquisition system.

The initial step was to scope the study and determine the pool of interview subjects. Pool selection began with a thorough search of the internal Air Force directory system. The first criterion for selection was that an interviewee's organization needed to participate directly in one of the two systems in question, JCIDS or PPBE. The second criterion was to gain a cross-section of people both at a major command, as well as others within headquarters Air Force, so the system could be understood from beginning to end. Organizations and individuals that participated in previous work were also considered [109]. The final selection was accomplished by examining duty titles, and then contacting previous contacts or placing cold-call telephone calls and sending e-mails requesting availability and interest in participating. The format was an open-ended, semi-structured interview. Allowance was

made to accommodate and allow snowball sampling; thereby increasing the size of the sample pool, and taking advantage of additional networks of people in other organizations. The snowball sampling was actually quite effective as it led to several other interviews.

Examples of some of the possible questions asked during these interviews were: “What is the role of your organization with respect to the system that you are a part of? Given a specific task, how long does it usually take to accomplish that task? Where does your organization and your job fit into the PPBE or JCIDS? How do you interact with the other pieces of the acquisition system? What is the current ‘state of the practice’ of portfolio management in the US Air Force? How is risk being used in portfolio management activities in the US Air Force? What behaviors or constructs can be observed in US Air Force acquisition that might be described as influenced by enterprise risk?” Interviewees were encouraged to walk a program through the PPBE and JCIDS from their perspective, the time required to complete each step or task in the process, and any vagaries that they were especially aware of that others might not be. More questions were asked about decision-making, surprises, and dependencies between programs, among other topics. Additional questions about job responsibilities, outcomes and performance measures were asked to add specificity if it helped with the context of other answers. Vague responses were met with follow-up questions. A larger sample set of representative questions appears in Appendix C.

The organizations that participated include elements of a major command, portions of the Air Force Secretariat staff and other parts of the Air Staff. More specifically, individuals from the Secretariat's Office of Acquisition Policy, the Air Staff A3 (Operations) and A5 (Plans and Requirements), a major command’s JCIDS policy and resources division, and few representatives of the user community (JFCOM – Joint Forces Command, GCIC – Global Cyberspace Integration Center), giving both a joint and Air Force-centric user perspective. In all, more than 25 different professionals were interviewed. Specifically, five of these interviews came from the requirements community, another seven interviews

represented the user community, and more than thirteen interviews represented the PPBE community. In each of these different groups, representatives from the earliest phases of the process up through the hierarchy to Headquarters Air Force were interviewed. The skew towards the PPBE is deliberate--previous work mentioned earlier did not include expertise in this area.

Results and Analysis

The results of these interviews are helpful and enlightening in more fully characterizing these two systems. In the next few pages, a closer and candid look into the operations of the different processes of JCIDS and PPBE will be given. The JCIDS process is interesting for the reason that it is event driven and it tends to stick closely in form to the process that has been laid out by regulation. It is not a process, however, to be strictly defined by exact timelines or time limits assigned to a particular task activity. There is a great deal of variability in the way that the system behaves over time--some items can sail through the process, and others take an extraordinary amount of time. The PPBE, on the other hand, operates most closely according to its published timeline found in the literature. Part of this is an artifact that it has a set deliverable due every year at the same time for congressional submission and subsequent debate.

The key issues and themes identified during the study will be broken out into separate sections to aid in better understanding these parts of the overall system.

The Program Element Monitor

One personnel position emerged as having a critical role in the larger process or the “big A” of acquisition. A majority of the interviewees mentioned this person unprompted in the course of their responses. This position is the Program Element Monitor or PEM. The name PEM comes from the budgeting artifact of a Program Element or a PE. A PE is how the Air Force describes the activity to Congress and how much will be spent in a particular area. This makes a PEM responsible for many of

the financial issues a program deals with. Sometimes a PEM is responsible for just one PE--other PEMs may have responsibilities for as many as 10 at a time. Furthermore, there are PEMs in many different locations--within the little "a" of acquisition, e.g. at the SAF/AQ level, major commands, and also within some of the A-Staffs at the Headquarters Air Force, as mentioned earlier. The following table highlights some of the concerns raised by or about the PEM.

Possible Root Cause or Causal Mechanism	Emergent Behavior or Effect on System
Span of control required	Some PEMs have too much; others not enough --programs can be at risk of losing resources because they can not be properly defended during tough questioning because PEM doesn't have time to know all of the issues
Trust issues between acquisition organizations (program offices and secretariat staffs) and PPBE officials	--Information hoarding; Resource preservation becomes motivating factor; bad news is delayed as often as possible, perhaps holding out hope for better news or a miracle
Budget drills and changing spending plans	Constant churn in funding plans; schedules, total program resources; can't focus on program strategically--always reactionary

Table 4: Issues specific for Program Element Monitors (PEMs)

"The PEM is where the acquisition chain and PPBE chain come together" was a common theme among interviewees. Others declared that the PEM should work capability issues across PEO portfolios, but sometimes it is not happening.

Other representative quotes include:

> "On some of the smaller programs, a lot of PEMs who work more programs will have five or six of them [PEs][25] that they're worried about, so they don't [can't] necessarily keep track of them every day." (PEM Supervisor)

[25] PE: Program Element. A PE is the accounting mechanism used to track funding for a particular project or weapon system or acquisition effort.

> “It can be kind of frustrating to you when your program office finally pops up and comes clean with something that they may have known about for a couple of months or longer.” (From a frustrated PEM interview)

> “And so they go through a lot of budget drills trying to figure out where they might be able to take offsets to fund other things. Well, some of those can come from out of the blue also and so you have to, you know, somebody comes up with what looks like a pretty harebrained idea to try to cut your program and save some money and redirect it elsewhere, and you have to pretty quickly try to figure out where the impact is to the program and get that back into the corporate structure so the best decision can be made. That's probably the biggest churn items that you get.” (From a supervisor of PEMs)

A PEM’s working time horizon is usually short-term in nature but requires an understanding and context working within the system:

> “I'd say that there's a bit of a range, but I'd say most issues, . . . I'd say probably fully a third of the time you're working fairly short-term issues, probably less than a weeks duration you get. . . . Very rarely are you dealing with things that have a horizon of several months. Like if you have a milestone coming up that probably involves a limited amount of effort spanning a couple of months.” (PEM supervisor)

> “A good PEM will know what time of the year is good to ask for additional funding, like if you’re coming into the spring execution review or just after, they'll have a sense for that and know that that's a good time to try to make those trades, or right at the end of the year as some money might be expiring.” (PEM supervisor)

> “Depending on the path you take, it would be within a week, or in many cases the horizon for something like that is maybe as long as a month. . . . If you find out about it in November, you may be forced to kind of cool your heels and wait for an opportunity which may not come until spring execution review four months later.” (From a PEM supervisor asked about moving money)

Despite the accountability function they provide, a PEM still doesn’t have full control over the money they manage. A PEM supervisor remarked, “PEM's know the financial status of the program, but can't move the money. Only a resource manager[26] can.”

The PEM seems to have a critical role in the workings of the Big “A” of Acquisition, but, based upon the comments and observations, suffers from the same kinds of drawbacks that “Portfolio Managers” in the Air Force do, in that they are constrained in a similar fashion.

Other Identified Issues

Over 30 different items for further analysis were identified through the interviews and these were distilled down to 11 overarching issues. Four of these issues were identified in both the PPBE and JCIDS interviews and one issue came from JCIDS and the user communities. Oftentimes, a potential solution was proffered by the same interviewee. The following tables illustrate these issues along with supporting quotes.

Possible Root Cause or Causal Mechanism	Emergent Behavior or Effect on System
No systemic approach to check context or interdependencies/duplication between programs	Priorities in flux; Program turbulence as decisions are made without regard to interdependencies; some duplication of efforts
Decision avoidance; Major decisions are constantly being revisited	Program turbulence; changing priorities and directions
Requirements change; Requirements creep; scope changes	Churn in program forecasts; budget requirements; schedules; estimates to completion

[26] The resource manager referred to can be either another PEM that manages execution year money (such as those in SAF/AQX) or someone in the AF Comptroller’s office or working in the Financial Management (FM) functions. In many cases, the type of resource manager is determined by the kind of financial money movement anticipated (changing colors, working a swap or trade with another PEM, etc.) or the amount (crossing a threshold) involved.

Process for resource allocation is conflict-oriented; consensus-building; qualitative	No formalized process to systematically discover and react to interdependencies; priorities in flux and change according to personalities in corporate process

Table 5: Common issues identified by individuals in JCIDS and PPBE

Interdependencies

Many interviewees declared that there's no formal process to discover or track program redundancies. Some were looking for an interdependency table or an interdependency understanding between programs. According to those interviewed, interdependencies between programs are hard to do; it's done manually; there is no strength of relationship between the programs assigned. Some interviewees maintained the process dealt with dependencies between other programs. As a dependency is " . . . Articulated within the panel, [if] they have a related program and then as it moves up, beginning at the group level and higher, we look at everything together." Ironically, there is a tool[27] that the Air Force owns where one of its purposes is to show interdependencies, but it's not being used for that. "Most other organizations have their own databases," according to the tool's manager. Some suggested that better training for managing interdependencies between programs would correct many process deficiencies.

The following quote is a great example of the way the PPBE treats every requirement independent of all others:

> "Each JCIDS document goes through the system by itself. If I approve the requirements for this program and decide that's where I'm going to put my dollars, that's what I'm going to pursue. Better idea comes up next week? Well, I'd like to do that, but I already spent my money over here. So from a requirements perspective, as those documents go through, there's no context related that I can understand those types of relationships. In theory EVMS is supposed to provide that, but I just haven't seen it." (PPBE participant)

[27] IRSS: an integrated requirements database that is designed to help facilitate the approval process of AF documents in the JCIDS process. A documented feature is the ability to identify interdependencies with other programs.

Decision Making

When it comes to making hard decisions, a JCIDS participant had the following observation:

"I think in some cases, there's not the will, the decisiveness of somebody at the appropriate level to say 'No, this is a bad idea.' You usually don't see that on the requirement side. I think budgeting and POM type decision-making is where more initiatives get killed than on the requirement side. . . . We can write CCDs all day long, but if the POM process doesn't support it, it ain't going to happen; if AT&L[28] is not willing to approve a program, it's not going to happen. So I think . . . perhaps we have the leverage on stopping something. Maybe that's where all three of those, budget, acquisition, requirements may be, [but] they've got more power to stop something than they do to make it happen. Or maybe not." (JCIDS process policy interviewee)

Mass coordination can be a way to avoid making decisions:

"We waste a lot of time sending things out for marginal improvements via mass coordination versus saying you are the expert. You have the authority to manage that function (without Air Force coordination). We make everything everyone else's business. I think that is our biggest bottleneck -- the way, we need to get everyone's permission -- on pretty much anything... for fear of leaving somebody out of the loop, we send it out to everybody." (JCIDS participant)

Requirements Change

Many interviewees opined that the biggest source of instability is requirements change. The following quote is illustrative of the interaction between the various systems of acquisition when requirements change:

". . . We in A5[29] generate the requirement. Once that requirement gets approved and it goes into the acquisition community and they work with the SPOs[30] and AFMC[31] finalizing the pricing--there's a whole group of people that do cost estimates. . . . Now the program world, the link is, we've got to understand what the requirement is, we've got to understand about how much it costs because we have yet to get the money lined up about two years before the contract was let[32]. So, that creates a lot of churn, you know, . . . so that causes ripples in the programmatic world. But they're all linked at the hip." (PPBE participant)

[28] AT&L refers to the Department of Defense level office of Acquisition, Technology and Logistics, residing in the Undersecretary of Defense for Acquisition's office

[29] A5: A Headquarters AF organization. This particular organization has generated requirements for a mission that doesn't yet have a Major Command sponsoring work in this area. When a Major Command assumes this mission, A5 will revert to a more traditional role at the Headquarters.

[30] SPO: System Program Office

[31] AFMC: Air Force Materiel Command – Major Command responsible for the majority of AF Acquisition efforts

[32] Two years refers to the amount of time required to navigate the PPBE from start to finish

Within the PPBE regarding a change to the requirements:

> "There's a lot of socializing, consensus building, you know, a lot of political type overtones and things like that where you have to work with a lot of people, and you'd better not, sort of, and knock over their rice bowls. You have to bring everyone together and sort of get people to work as a team, brief leadership. After you get consensus at the action officer level, you brief leadership and tell them this is what we're going to gain by doing this. And then you have to execute. Then you have to adjust the schedules and update the documents, and update the PEM parades[33] and update everything that you're going to be briefing up to the IT exhibit and the roadmaps." (PPBE participant)

According to interviewees, this takes anywhere from a week to up to a year, but the time to shut down and kill a program can take about a month or longer, " . . . and the decision to kill something still keeps getting revisited" (PPBE participant).

Conflict-oriented; qualitative; consensus-building

The corporate process in the Air Force ultimately sets priorities by allocating resources for those activities. However, one concerned PPBE participant remarked:

> "I know that in the POM, just like we did in APOM, we prioritize and we talk about radioactivity[34]. They have two scales you prioritize one through N and you prioritize A through D, one of them being external to the Air Force? Is it high-level push versus local? Another one is, is it "A" radioactive, meaning that there is high-level politics, versus "D," low-level. I have not seen any type of quantitative analysis that would be used to be able to explain why you placed a capability or program in a certain bucket."

Another user remarked, "Do you control the money, or are you just influencing it? And I think we saw through our experiences here that without control of it the influence doesn't go a long way, necessarily."

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[33] "PEM parade" is a term used to describe the series of meetings lasting several days where PEMs are "paraded" before the leadership of the organization to brief and defend their programs from a financial perspective. This activity is usually near the beginning of the PPBE cycle.

[34] A term used in the PPBE corporate process to assess the politics associated with a program.

"The whole corporate structure, this is my opinion, you know, it's designed to be conflict oriented, just like, kind of like the government, in the sense that it depends on conflict between these major organizations, A8, A5, AQ." (PPBE participant)

Here is another perspective from a JCIDS participant:

> "AQ kind of brings to the table all the acquisition expertise. A5 kind of works all requirements. . . . A8 is more or less the budgeters. The guys in there have primarily operational backgrounds and they're well-suited to trying to tease out what the priorities are between programs, which bunch could get funded and which bunch shouldn't."

Although these were common to JCIDS and PPBE, many of these items are strikingly familiar with those identified within the acquisition system described in Chapter 3.

Possible Root Cause or Causal Mechanism	Emergent Behavior or Effect on System
Official Process not followed; Theory not followed; Effort to Circumvent processes made	Schedule delays; inevitably certain process aspects must be followed or revisited
Politics	Program turbulence; churn in changing priorities, program forecasts, budgets, schedules;

Table 6: Common issues identified by individuals in JCIDS and the user community

Process Discipline

An area of frustration for both the user community and those responsible for the JCIDS process dealt with the official processes in place for Acquisition. "My opinion is that if people would spend as much energy trying to work within the system, they'd get done a lot quicker than trying to figure out how to work around it," as one JCIDS participant remarked. "Nine times out of 10, what they want to do is not by the book."

Breakdowns of the process are typically assumed to be the result of taking short-cuts:

> "Things that seem to not do well going through the JCIDS process are because they didn't do sufficient analysis to justify the performance attributes of that. Or they didn't do sufficient analysis to prove why that was the best capability suite to answer a given set of gaps." (JCIDS participant)

The user community has also observed the lack of discipline extends beyond JCIDS. As one user put it: " . . . We haven't even with the last few years emphasis on capabilities and effects-based planning operations; we really, the manner in which we plan, allocate and execute resources hasn't followed that."

Politics

"Our instructions that dictate what we do, do not allude to the political realities that you typically have to deal with within these communities." This observation came from an "end-user" or war fighter. As an example, one CDD[35] has been in coordination for three or four years. "It's not so much the technical requirement as it is the politics associated with the system," said one JCIDS participant.

Some users recognize their limitations with respect to funding programs--and don't like it:

> "So it's an influence versus control [issue]. But I think the control lies with AQX . . . if we don't execute, then we've lost our control. That's why we have internal reviews, monthly execution reviews and internal reviews with our portfolio management people on a repetitive basis, to make sure we're spending, or our programs are spending, our lead commands[36]."

Many of these issues were similarly echoed by members of the acquisition system.

Possible Root Cause or Causal Mechanism	Emergent Behavior or Effect on System
No resources ($s) available for early program exploration	Overall process slowed; analysis poorly done; later phases have to take time and money to do the job
Process can't say "no" to new programs; beholden to sunk costs	Too many items in the pipeline; other systems assume each other will exercise refusal rights

Table 7: Issues identified by individuals within JCIDS only

[35] CDD: Capability Development Document; typical timeline for approval is much shorter

[36] This quote may seem strange as the user implies that it is responsible for spending money. In this case, the user is highlighting what happens if the associated acquisition organization is not able to spend money properly--according to goals and published expenditure targets--those moneys are at risk for being redirected elsewhere by AQX. If money is taken, schedules and scope of work are at risk of being changed. This is how the user organization "loses control" of these moneys.

Poor resourcing up-front

The "process" for a new program requires a great deal of analysis at the beginning of any effort. However, the way the system is currently set-up has several built-in disincentives.

> "If it's an established program, you can either pull it out of hide[37] or POM for it. But if it's something that doesn't have a PE yet, especially if it's something that's going to turn into an ACAT III or a small program, then you're really struggling to try and pull those resources together. Until you're a program, you don't have a PE. Without a PE, you don't have a program office, you don't have money, you don't have nothing, nobody to help you, and well, you're all the way up to milestone B[38] before you really become a program." (JCIDS official)

> This quote plays off of the last paragraph's quote:

> "Good analysis isn't cheap, and it's not exactly timely. It takes a while to do the types of analyses, especially when you talk about ACAT I programs, you know, you're looking at, typically like 18 months to do an analysis of alternatives. That's a long time for a program and while you're doing that analysis of alternatives, you could be losing money, you could be bleeding money off the program. . . . The MAJCOM's priorities can change. You know, because they're the ones . . . to be clear, typically, when you're at that stage, you don't necessarily have a program yet, you're just out there doing a quest for the truth. So you know, who's doing that? Who's footing the bill for that? The MAJCOM has to be willing to foot the bill for it and if they have other priorities or things change . . . their priorities change or change for them, that's going to get pushed by the wayside, it's going to delay coming to the conclusion that you need to come to." (JCIDS participant)

Program Gate-keeping

Regarding new programs, there are many ways that one can be started. On the Air Force side of the JCIDS process, according to interviewees, the Air Force does not require money to be allocated for a requirement to go through the process. However, it is required for a document that is going through the joint process of JCIDS. This leads to many opportunities for small efforts to be started, since they typically will escape joint scrutiny, and seek additional funding through the official system as progress is made. As more money is spent, the more difficult it is to prevent the program from being finished--even though it was never officially sanctioned or has a heritage in the traditional JCIDS process.

[37] Pull it out of hide: an expression meaning you'll pay for it somehow out of your existing resources.

[38] Milestone B is the official "start" of any acquisition program

Possible Root Cause or Causal Mechanism	Emergent Behavior or Effect on System
Moneys are treated differently depending upon execution, budgeting, or planning phases	Mismatches in financial priorities between PPBE, Acquisition, and user
Not enough resources for programs	Financial shell games; spreading out dollars across multiple years; extending program schedules
Budget drills, timing, PPBE complexity	No margin for stochastic events; inevitable delays; constant churn or program turbulence; little financial stability

Table 8: Issues identified by individuals within PPBE only

Money differences in acquisition phases

The way the PPBE is structured deliberately separates the way money is used, depending upon the timeframe involved. But this separation also spurs behaviors to play the strengths and weaknesses of each organization off of each other as the following quote illustrates:

> "A8 and AQ at the headquarters have the majority of the influence over what money is going to be spent where. AQ, from the perspective of a kind of 'go,' 'no go,' if there is enough money to execute the program or not, obviously, if you cut a program past a certain point, then AQ declares we can't get there from here, we're done. So A8 is constantly trying to find that boundary, and trying to spread the dollars around as much as they can to get as much capability as they can." (PPBE participant)

The following quote is an example of one PPBE participant suggesting program turbulence is precipitated by another organization:

> "Budget drills often originate in the office of AQX because they're looking across investment funds and trying to find money. . . . Where AQX has the primary role . . . in the actual years of execution. So if the Air Force is already in possession of the money and we're executing and spending those dollars, they have a lot more leeway and try to work with the Comptroller to move those dollars around." (PPBE participant)

Not enough resources

This extended exchange between a PPBE participant and the interviewer is enlightening as it gives insight into some of the games that are played in budgeting, especially in the Air Force's fiscally constrained environment:

Interviewee: “A lot of times we’re just afraid and say okay were not gonna judge this in the POM; it's gonna be an execution year bill[39]. That just becomes an O&M[40] problem. Interviewer: Then O&M needs to find money to pay for it during the execution year? Interviewee: It's not in the POM but you still get an O&M budget every year just for whatever.”

Interviewer: “How is it tracked?”

Interviewee: “It would come out in the POM, you know, when you publish the POM there will be a line in there that says okay, we didn't fund it. And you know, because, you know it’s not funded during execution, so then the FM guys will see that and say okay, we've got to fund this during execution. So that'll come back to the POM, so, whoever submitted that, that funding request, they'll get the data back and okay, you didn't get funded and the note was you got to fund it in execution. So then you have a choice, okay, well do I use my execution year dollars to fund it or do I just not do it? There are a lot of must pay bills, you do that, because you know it's a must pay and so if you just deferred to execution year, someone's got to pay for it somewhere.

Interviewer: “And then to fund these programs, people start looking for similar programs that can be used as a source to pay these execution year bills.”

Interviewee: “This is one of the purposes of the spring and fall execution reviews.”

A wonderful understatement by a PPBE participant captures the essence of the system, "There is no extra money."

Money Drills

Budget drills happen all of the time. This is a common theme among most of the interviewees. The following quote from a participant in the PPBE is indicative of the complexity and velocity of the PPBE that contributes to the churn in the overall system:

“For instance . . . I'm doing unfunded drills for ‘08 in 3400 dollars. . . . I just got a heads up that we're going to be putting together the Chief of Staff of the Air Force's unfunded part of this for

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[39] A term reserved for something that must be paid, but in order to balance the budget, is made zero. It counts upon the fact that a program somewhere will likely face trouble executing all of its moneys during the execution year and can be paid through this means.

[40] Operations and Maintenance. In this context, it refers to the moneys that are only authorized for 1 year’s obligation and spending and have somewhat greater flexibility in disbursement options.

FY ‘09. . . . So I get a tasker[41] for the end of the month. We're starting to put our exhibits[42] together for ‘09. . . . We just got done with the President's budget. We just got done with the PDM's[43] and PPD's[44] for ‘09. Okay, so we just got done with that. We are working hard on the ‘10 POM. And every Wednesday going out, starting next Wednesday for three weeks, we have meetings with the Air Force, with all the MAJCOMs on the ‘10 POM. On top of that, the panels are starting their MAJCOM reviews next week for the ‘10 POM. And then we'll go into the PEM parades[45] just around the 25th of January. So you're constantly churning at three levels, current year, next year's execution plan and then the FYDP[46].”

Another PPBE participant noted, "Every day I'm working at the execution year. I'm working at the next fiscal year, and I'm working in the FYDP.”

More quotes that lend support for the constant churn the system exhibits:

> “Sometimes we slip a program because it's early to need, because another program has slipped. And then it may come that when we actually get to those years then that something else has come along and we can take those dollars from that program. So yeah, a lot of times it's, well, this program is underperforming sort of a slip it and eventually hopefully we can kill it.” (PPBE participant)

> “We break good program so that all programs feel the same level of pain. To level the playing field. I mean, it seems ridiculous but if you have a program that's really executing well and you have one, that's the disconnect, I can level them out so they're all feeling the pain evenly.” (PPBE participant)

> “So, based on the guidance we have there is a constant churn of ideas and programs and whether or not a program is executing correctly, you know, there's a constant churn, okay. But we just take a position and time outside the Air Force, on even numbered years, and then on odd numbered years, we can change things, but we can't start new programs on odd numbered years. We have to zero balance in odd numbered years, and there's no new starts.” (PPBE participant).

[41] Slang for a task or assignment

[42] Documentation supporting funding recommendations for a budget submission (aka POM)

[43] Program Decision Memorandums

[44] Program Planning Document

[45] PEM Parade: slang for reviews of the PEs managed by a PEM across all years of spending and budgeting

[46] Future Years Defense Plan

Other issues

Six additional topics emerged from the analysis that didn't align well with the reporting construct above. Instead, these tended to be a direct result of the interview questions seeking to validate or refute preconceived notions. These areas are: system timelines; system capacity; process coordination; accountability and power distribution; definition of portfolios; and process quality and precision.

Timelines of the System

During the course of these interviews, many references to temporal dynamics of the overall system were noted. Samplings of them are listed below:

> "[If] it's going to go all the way to the JROC, I'll tell them 15 to 18 months.... but practical experience is that it takes longer than the book says. And if they don't run into problems, 15 to 18 months is probably reasonable. If it's not a joint issue, especially if it's an independent document, 6 to 9 months, depending on how hard they want to push." (JCIDS participant)

> "The first step in JCIDS is the analysis, and you do an ICD and all this stuff. That will take you a year or two, typically two years." (JCIDS participant)

> "The requirements process timeline. Number one, the RSR is the first step. Number two, if it is an ACAT I, it will take just shy of a year to get done, and that's if things go normally. Number three, if it is important to a major command, they could squeeze it down to seven or eight months (plus some star alignment)[47] as the AFROCC meets one time per month, the JROC more often). It's the catch the bus analogy. If you miss the meeting, you have a built-in delay." (JCIDS participant)

> "A non-ACAT program or service unique program saves at least one month." (JCIDS participant)

> "An ACAT III program stops at the AFROCC. ACAT II goes to A35 for approval. ACAT I, but internal to the Air Force, stops at the AFROCC and gets the chief's signature. Plus staffing time. Usually two months savings when not joint." (JCIDS participant)

> "It takes about a year to get an ICD, and then two or three years building to 10 years or more to get a program." (JCIDS participant)

[47] Referring to Generals ("the stars") and getting them all together in one room at a time.

“The timeline for money on a new initiative is approximately 2 to 3 months.” (JCIDS participant)

“April is the timeframe for the spring program reviews[48].” (JCIDS participant)

Capacity of the System

During the course of these interviews, many references to process capacities of the overall system were noted. They were not reported as capacities but further reflection indicates these can be construed as such. Samplings of them are listed below:

> “Typically, we'll have about 20 JCIDS documents, somewhere in the process at any given time. Some of those make it all the way through the system. Some of them get abandoned for one reason or another. Probably, I would say 15 or so wind up getting approved each year.” (JCIDS participant)

> “We probably see about 10 a month, 10 to 15 of those a month, that we have to take care of also.” (This statement refers to documents originating outside of the major command.) (JCIDS participant)

> “It's normal to see 60 or 70 of these things a year. . ." (at the Air Force level office for JCIDS). (JCIDS participant)

The following quote deserves special attention. It implies an acknowledgement of capacity issues, but also abdicates responsibility for managing that capacity and relies upon an outside organization to do that. This was from a person within JCIDS, and closely aligned with the user community as well:

> “Okay, I got 10 people, so I may get 10 people's worth of work. But I'm going to keep giving them work and I'm going to give them the work of 50 people, but knowing that I'm only going to get 10 hours. So yeah, that's what I meant by recognizing there is a finite level of capacity, . . . but that doesn't mean I'm not going to give them 50 requirements even though I know they can hold, handle 10. I'm still going to give them all 50 requirements. And they'll work it in their priority unless I say, okay, I gave you 50 but, you know, I want you to work 35 to 45 right now. I need those right now. And then maybe you'll get to the other ones. . . . Well, if they're important to somebody, it'll bubble up again, otherwise it'll just . . . it won't completely go away, it'll still be there, and maybe somebody, you know, in a month or so, say, you know, I've got this,

[48] Depending upon the organization, any month in the early part of a year would be their time for the Spring Execution Review

> is this still important, do we still need to do that and we'll all go, yeah, we may still need that. Then, you know, it'll go back in there again."

Coordination

This is a specific issue only for JCIDS, but has some interesting process implications for the larger enterprise. First is the idea relating to quality measures. Second is the inherent uncertainty the design of this process introduces, and third is the potential for a misappropriation of power.

> "JCIDS I think has a lot of problems, but just the coordination process, I think is one of them in that when you have to please everybody, you wind up with mediocrity quite often." (JCIDS participant)

> "And I guess in what I do, and half of these documents get through the system, probably the biggest risk is the coordination process. You just don't know how long. When you start one of these documents, you got some suspense that you're looking at. Like milestone B is going to be on this day. I need to have the document approved by then, and there's a risk in not completing the document and probably the coordination process is the biggest driver on that, because you just don't know what people are going to toss at you." (JCIDS participant)

> "I already mentioned that when you coordinate these documents, there's no control over what kind of comments can come in from anybody who looks at it. And somebody says this is a 'critical comment,' it brings the whole process to a screeching halt, till you can change their mind. Or capitulate." (JCIDS participant)

Accountability and Power

A few individuals commented on the way the system operates at large. Ironically, all of these comments were made by individuals outside of the system – representatives of the user.

> "The nature of the PPBE in JCIDS is that it takes years and years to get anything done, so 10 years into this program and nothing of substance has happened, who is blamed? A lot of people got fat OPRs[49] along the way, but nothing got built."

> "It's muddy because there's umpteen levels of management... if you have three people doing the job of one, it not only won't be better, it'll be worse."

---

[49] OPR: Officer Performance Report. This quote addresses the yearly evaluation and incentive structure that exists within the acquisition system and suggests that lots of people received exceptional performance reports when not really doing anything.

"If I create a system that is so complex, tax code-ish complex that I have to have specialists guide me through it, who should really be building a radio? An engineer who understands how to build radios, or people who are experts in the process? The people with all the power are the experts in the process. That is a big problem. The process is much, much too complex and if people who have all the power are the people who become the lawyers, the experts in the system, that's no way to run a railroad."

"The subject matter experts aren't there. It's the person who is good with rules that wields the power. Somehow we need to get the subject matter, the actual engineers who build things, tied into that process, to keep bad decisions from being made by people who are experts in the rules of money, but are not necessarily experts in the thing that's being built."

Portfolios defined

While finding a definition of portfolios within the Air Force was one goal of these interviews, after several of them, a clear conclusion could be made: a portfolio means something different to almost every person. "A portfolio is just a way of binning systems." "A portfolio is a grouping of programs." But all recognized that it could be organized a million different ways--through "different slices and dices," thereby diluting the meaning and power of managing by portfolios.

Process Quality and Precision

This topic holds a wide variety of opinions, but also sheds some light with a fair assessment of the quality and precision of the overall system.

Comments on the overall process:

"We are guessing what the world will look like in ten or fifteen years."

"We have champagne tastes on a beer income."

Comments on JCIDS:

"The quality of requirements documents is fairly uniform from the various major commands throughout the Air Force. It is a discipline process."

"The JCIDS process as a whole is too long because they keep adding boards and reviews, and then on the other side of their mouth they say it takes too long."

"So the guys here wind up probably ten days to weeks or so they have to look at them. Sometimes that's enough. But some of these things are three, four hundred pages. Personally,

if they want an honest review, I don't think there's enough time given to the real experts to look at it."

Comments on the PPBE:

". . . Why do they do what they do? Well, I guess the most obvious answer would be that when they need to get money, they take money somehow. If they don't do it intelligently, they, for example, say okay, everybody gives five percent or everybody gives fifteen percent, whatever the number is that you've got to get to the bottom line with . . . in some cases, you're taking money out of management reserve and maybe it won't hurt anybody, in other cases, you're killing somebody. Maybe they're already behind. So that kind of salami slice approach can get you into trouble. But when you don't have much time to really figure out things or if you can't get real good information from the acquisition guys who have the numbers, you do things like that because you got to . . . the clock says it's five minutes to twelve, what's your answer, you got to come up with something. So probably, there's a lack of information, probably there's a lack of time and there's a need to do something and they do it."

Chapter Conclusion: Implications of this study

Based on the observations and results of this small study, many behaviors of the larger acquisition system have been listed and identified--often as a problem or as a consequence of something else. It is much easier to acknowledge many problems within acquisition are often times formed well outside of the original boundaries of the "little a" acquisition system. Furthermore, this observation was repeatedly validated by the interviewees working in the systems outside of acquisition. Analysis of these systems also supports the idea that rational actors exist throughout the system and behave accordingly, which often means that without other influences, people optimize locally and do so rationally within the construct of their immediate system. In this regard, the "system" seems to be the customer of many of the efforts of the people working the acquisition of systems for the US Air Force rather than the actual airman in combat or operational environments, e.g. the war fighter. After a careful examination of the PPBE and JCIDS; however, no clear conclusions can be drawn except that the system often behaves at odds with expected outcomes. It is also naïve to think that root causes or main causal mechanisms for deviations from outcome measures of programs, in particular cost and schedule, would be so easily identified using these interviews. It does, however, lend credence to a

growing body of evidence that suggests large, complex systems often have emergent behaviors that can be counterproductive.

Further, the concept of managing programs through portfolios is immature and portfolio risk understanding is primitive outside acquisition. While everyone has ideas about risk & portfolios--intuition says we should be able to do this--this idea wasn't borne out in the interviews as answers were all over the map.

Development of a model of the overall US Air Force PD process, including those portions of portfolio responsibility and authority residing outside the acquisition system, is a logical next step towards understanding emergent system behaviors. In the following chapters, a framework and model will be introduced that attempts to rationally characterize the entire system, with its emergent behaviors, allowing for additional testing and analysis. A simulation of the enterprise and analysis of enterprise outcomes may shed light on the efficacy of current efforts to reform and administer the current processes and existing system portfolios.

CHAPTER 5 -- A MODEL OF THE ENTERPRISE ACQUISITION SYSTEM

In the two studies previously described, both members of the acquisition corps and members of PPBE and JCIDS expressed concerns and frustrations about the overall behavior of the system. In order to understand these behaviors, development of a model characterizing the entire system (the big “A” of Acquisition) was undertaken. Key to the development would be to accurately characterize all of these issues.

One of the more important modeling issues was a desire to keep the model as simple as possible yet accurate enough to capture enough information to construct a model that would accurately depict the overall Acquisition system behavior. A quick review of existing models in the literature dealing with many of the problems of acquisition revealed no overall approach to the entire system. Many of these models picked out a very specific issue like cost growth during the technology development phase and derived a predictive model from the database of a few programs examined. Others looked at schedule growth or requirements growth and hypothesized causal factors based upon a sampling of different programs. Still others looked at specific policies and their impacts upon contracts or other items of acquisition interest. See more information about these studies in Appendix A.

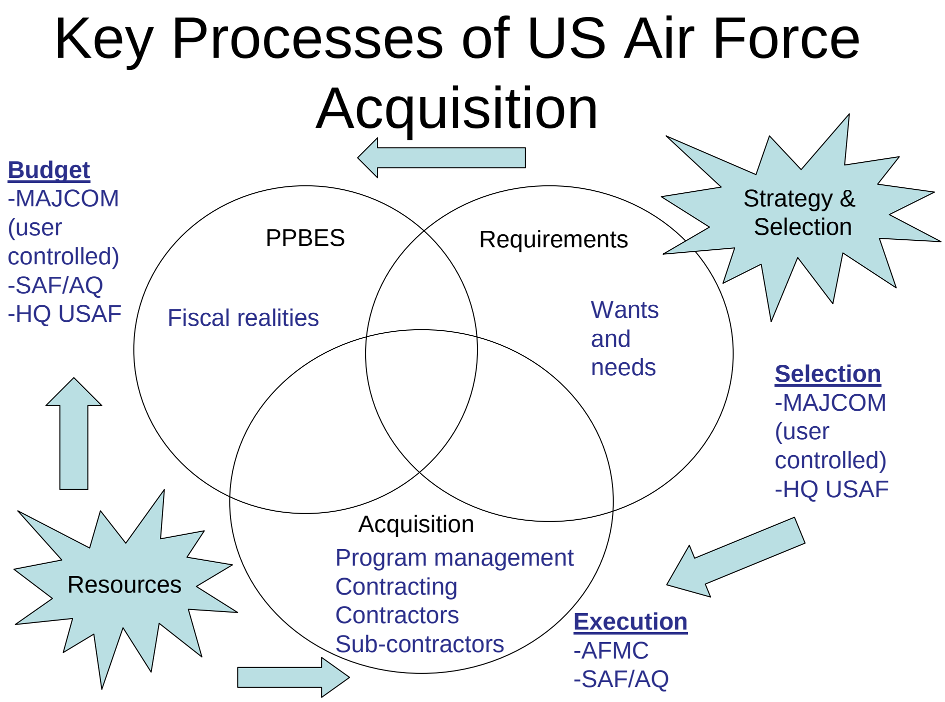


Figure 20: A Holistic View of the Acquisition System

The two studies conducted as a part of this research further emphasized the need for a comprehensive or a holistic model of the entire acquisition system. However, it was not clear exactly how to construct such a model. The system consists of the three processes depicted above. It involves both resource management as well as selection of systems for development. It is explicit in the distributed responsibilities among various organizations throughout the system. Any model would need to be able to account for these items.

A key breakthrough occurred during the analysis of the interviews of the second study. During these interviews, each interviewee was pressed about different outcome measures of the particular job or task they did: How long did it take to do their job? What was the typical task like? The answers were, almost without question, uniform in their response, "It depends." It depends upon the program being talked about; it depends upon the sponsor or champion of the program; it depends upon the technology or the money or the structure of the acquisition, etc., etc., etc. During the course of the

conversation, however, interviewees eventually were able to abstract answers into a time range or a time distribution. Decisions and key process checkpoints were abstracted into probabilities.

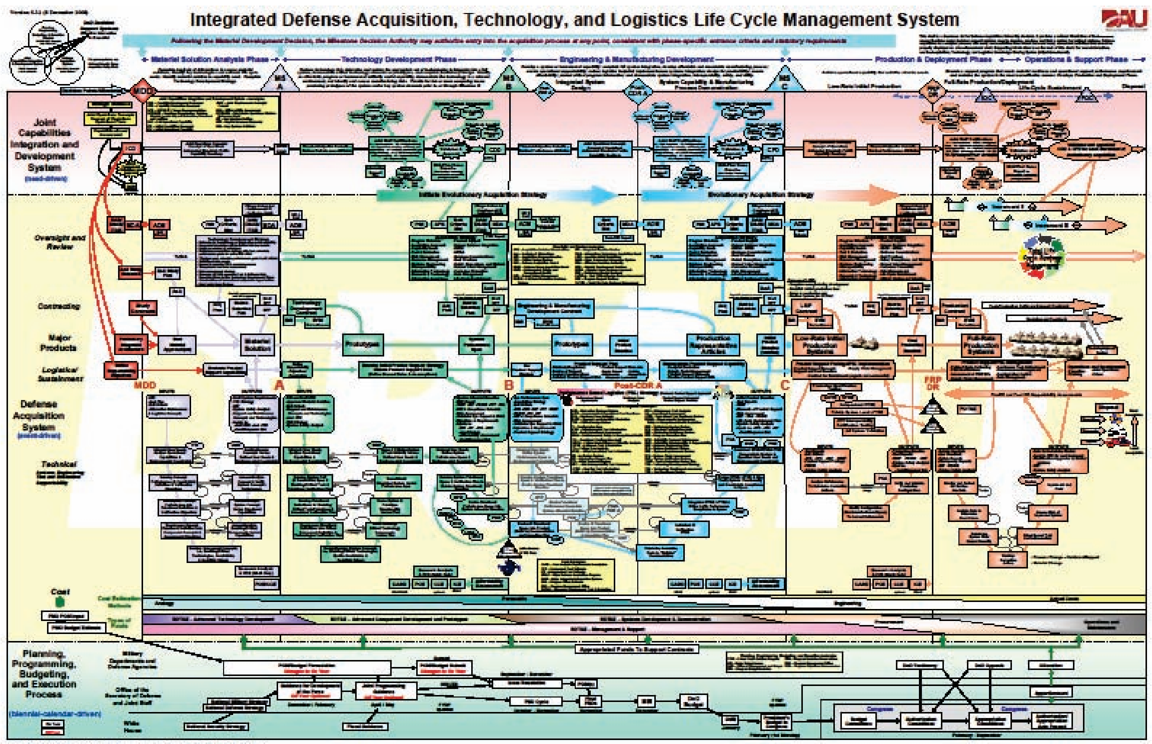
This sparked an idea of taking this information and seeing if it was possible to construct an overall model, at the same general level of abstraction, for the entire system from the information provided by the interviewees. It relied upon the basic understandings of risk, probabilities and occurrence, and, therefore, upon further examination, many of the first study's interviews contained a similar level of abstracted information since the initial focus of that study was to understand risk in acquisition. Between these two studies, the overall impressions left by the interviewees tended to confirm the underlying supposition that the behaviors decried within acquisition are often the result of emergent behaviors of the overall enterprise system.

The initial starting point for building a model of the entire acquisition system then was to take process information from official sources, like AF and DOD Instructions on JCIDS, PPBE, and Acquisition and put these on paper. Each of them presented an idealized process flow, as per the exhibited diagrams in the previous chapters, but offered very little details on the interactions and interfaces between the processes. The various interviews were used to fill in those details and bridge the gaps. Arrows connecting activities and processes were drawn. Based upon various official documents and process flow information, a time-dependent process flowchart was constructed by stringing together the various process steps and decision points within the system. The resulting model is straightforward as it consists of various processes, decision points, and the accompanying logic to walk through the entire process for a program in development.

Model design and depiction

Based upon the discussion in Chapter two about modeling and simulation, a model capable of discrete-event simulation was chosen as opposed to other modeling choices. One of the conscious decisions made about the depiction of the model was to put it in similar terms as to what most

acquisition personnel are accustomed to. This work should be of value to the Acquisition professional and the DOD in general. The Defense Acquisition University has prepared an instruction aid, nicknamed the "wall chart," that is used to educate both acquisition personnel, as well as others about the defense acquisition system. The wall chart presumes the object of interest is a single acquisition program. It does not look at multiple programs at once, although one could extrapolate and envision the complexity such an arrangement would bring. The chart is divided into sections or "swim lanes" corresponding to the functional domains of the overall system. The little "a" of acquisition is emphasized in this depiction--as a result of the primary purpose of the chart--along with other items. There are 4 major swim lanes--depicted horizontally--representing the user, JCIDS, acquisition, and the PPBE. The processes depicted cross these boundaries, interact, and imply a temporal aspect of the process from left to right (see the figure below). The output of the model consists of a record of time elapsed for a single program and also reports proposed time durations within the model to allow for further analysis and comparisons with the actual simulated results. The model is easily extendable to do the same for program costs. Because there is a tight coupling between program duration and program costs, program costs were not explicitly tracked. This assumption can be explored further in future work.



[120]

Figure 21: The "Wall Chart" of the Defense Acquisition System (December 2008 version)

Based upon these reasons, the developed model is similar in format and has many of the same characteristics as the figure above.

Model Scope

Another important consideration was to establish the proper scope of the model. As described earlier, the big "A" of Acquisition consists not only of three large interacting processes divided along functional lines, but also along a temporal scale--from an initial idea through the eventual retirement and disposal of a system.

Such a system is huge in scale and scope, but as the primary purpose of this research is about the acquisition of weapon systems, the exclusion of the sustainment phase seemed reasonable. Further, the production phase (post MS-C) was excluded as by that time most of the costs for the design and development of the system have been incurred. The following figure illustrates the scope of the model.

A Representation of the Enterprise of "Cradle to Grave" Acquisition in the US Air Force

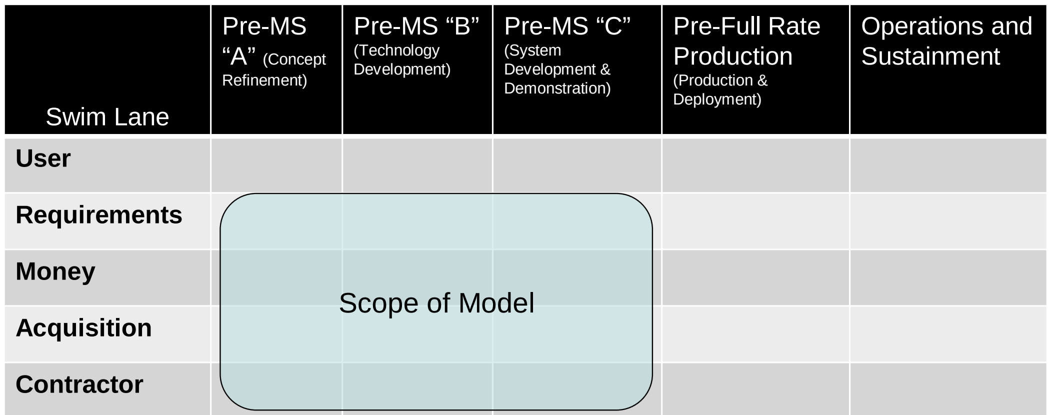


Figure 22: Model Scope in Relation to the Overall Acquisition System

The user "swim lane" is shown only to acknowledge the role the user plays in the process, but is excluded in the model's scope as the Requirements swim lane acts as a surrogate for the user by driving the requirements for systems. The contractor swim lane is added to the model to acknowledge the role contractors play in the acquisition system. This portion was added based upon the author's experience regarding its interaction with acquisition and would be used to help account for the uncertainties that exist in the overall execution of development contracts, such as technical difficulties, changing requirements, and other issues.

Furthermore, the acquisition system categorizes programs going through the system using a series of Acquisition categories (ACAT). See Chapter 2 for a more detailed discussion. ACAT I programs are typically the largest or the most politically sensitive. ACAT II programs typically are software intensive and have special requirements. ACAT III programs don't qualify in either of the other ACAT categories and are usually much less money and less politically sensitive. These are all known as "Programs of Record." There are a handful of ACAT I programs, a few more ACAT II programs and many more ACAT III programs in existence at any given time. Additionally, programs that don't meet any of

the criteria defining ACATs exist-- these non-programs of record are monetarily miniscule in comparison to other programs. For purposes of this model, only ACAT I, II, and III programs will be included in the scope of the model.

Model Symbology

The model uses terminology from Business Process Modeling and Value Stream Mapping. For instance, a “rectangle” is a task or process with a given time distribution associated with it, represented by a triangular distribution of low, most likely, and high process duration time. A “diamond” is a decision point with branching probabilities of “yes” or “no” or other alternatives. An “oval” is used to represent information to explain items within the different processes or to further explain the model. A “parallelogram” shows the final output or product of a process or processes, such as a document, a prototype, or a final delivery. The freeware program, Dia, a Microsoft Visio-like diagramming tool, was used to develop the initial models of the Acquisition System.

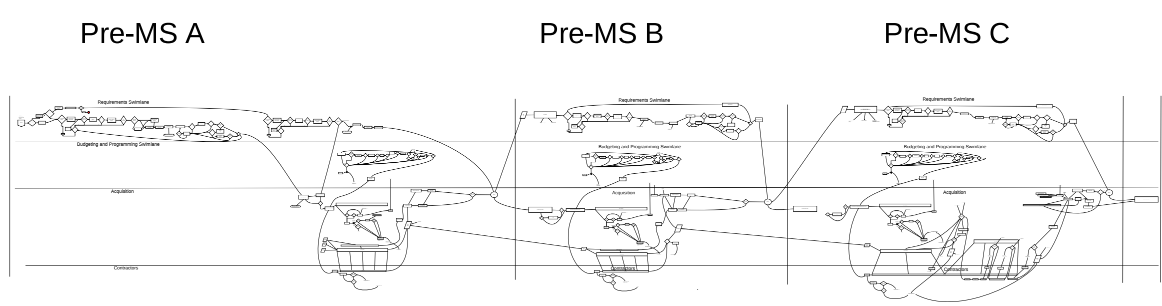


Figure 23: Conceptual model of the Acquisition Enterprise

In the figure above, the model is divided into three distinct phases. The swim lanes, from top to bottom of the figure are marked by the horizontal lines. The top swim lane depicts the JCIDS process within the USAF and portions of the DOD. The second swim lane depicts the PPBE, the process is identical in each phase and is a continuous process. The third swim lane is the acquisition system and the last swim lane is the contractor swim lane. The Pre-Milestone A portion of the model shows the heavy activity in the requirements portion of the model. This makes sense as new requirements are

generated in this portion of the model. Later model refinements continue this trend and are able to accommodate other acquisition programs that leap-frog different phases of development, while establishing a “start” to these programs as well.

In the Pre-Milestone B portion of the system, the Acquisition system takes on a more defined and larger role and finally, in the Pre-Milestone C portion of the system, both the contractor and acquisition swim lanes have the most activity as they prepare a system for delivery ready to enter production. The bulk of the extra activity in the Pre-Milestone C version relates to fabrication, test and evaluation activities of the system in development.

A printed version of this conceptual model on a roll of poster paper is about fourteen feet long by four feet wide. Therefore, to further illustrate the structure of the model, a closer look at one portion of the model will be made. For convenience, the very first portion of the system (in the Requirements swim lane) will be examined. The entire description of this conceptual model is located in Appendix D.

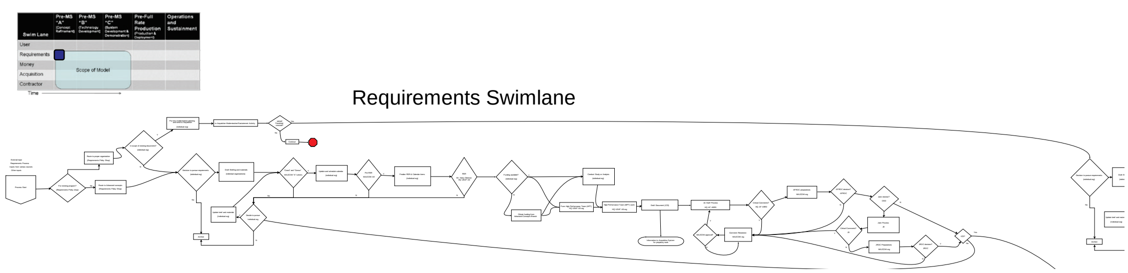


Figure 24: Close-up of the Requirements portion of the Pre-MS A swim lane

The overall conceptual structure of the model is easier to discern with this figure. The smaller picture in the upper left serves as a reference to where the model components shown are in relation to the entire lifecycle, as well as the rest of the model. It is represented by the small dark square in that picture. After entry into the system, an idea or program meets a series of decision points (the diamonds) as well as process activities (rectangles). Dependent upon the probabilistic outcome of the decisions determines which path is taken. As the processes are also stochastic in nature, the time

required to complete the processes varies. Overall, the path taken and time required from start to finish potentially could be different each and every time.

Key to the intellectual richness of the model's design is that every decision point, every process task, where possible, is thoroughly documented and sourced. In cases where such information was unavailable, secondary sources or inferred information was used. Regardless of the type of information used, they are clearly identified in the detailed model documentation, allowing for changes and refinements, as required, as the Acquisition system is modified over time. An example of this sourcing follows below.

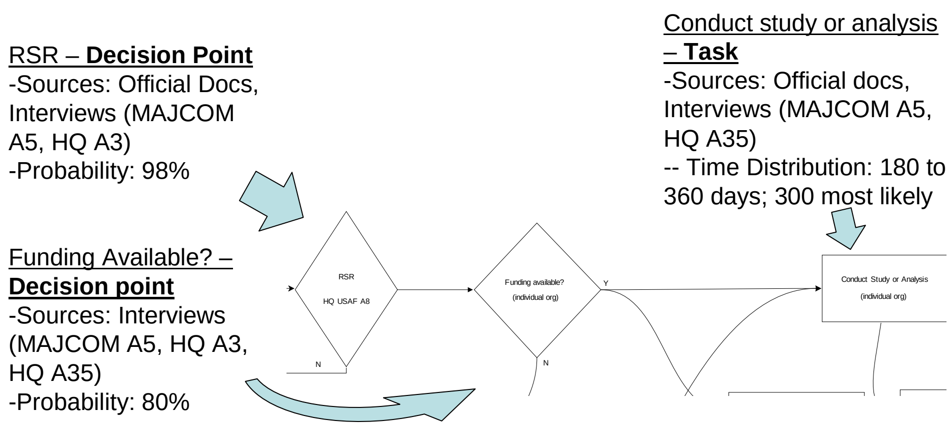


Figure 25: Close-up view of three elements of Pre-MS A Requirements swim lane

This figure represents three individual activities in an early portion of the requirements swim lane, Pre-MS A. The first activity is the RSR or Requirements Strategy Review. This is a review gate that determines if a fledgling idea will proceed farther in the overall JCIDS process. It was documented through both the literature and interviews. In this case, the interviewees indicated that there is a 98% probability of being granted approval to proceed into the system, and part of this was that the previous process steps scrubbed items hard before allowing an idea to get to this phase. The second process check was regarding available funding preparatory for the third step shown. According to interviews, the probability of having the necessary dollars in place was 80%--again due to the heavy institutional

scrub given an idea before sending it to the RSR. The third item is a process step called “Conduct Study or Analysis”. Through both official documentation and interviewees, it was determined that this process required anywhere from 45 to 180 days to complete, with 80 days being about the norm for most.

This is the way in which the conceptual model was built and documented. Validation and Verification of the model will be discussed in the next chapter. However, the following figure represents the final form of the model and its representation in Rockwell Software’s Arena Discrete-event Simulation Software. The Research version of the software was used to complete the model.

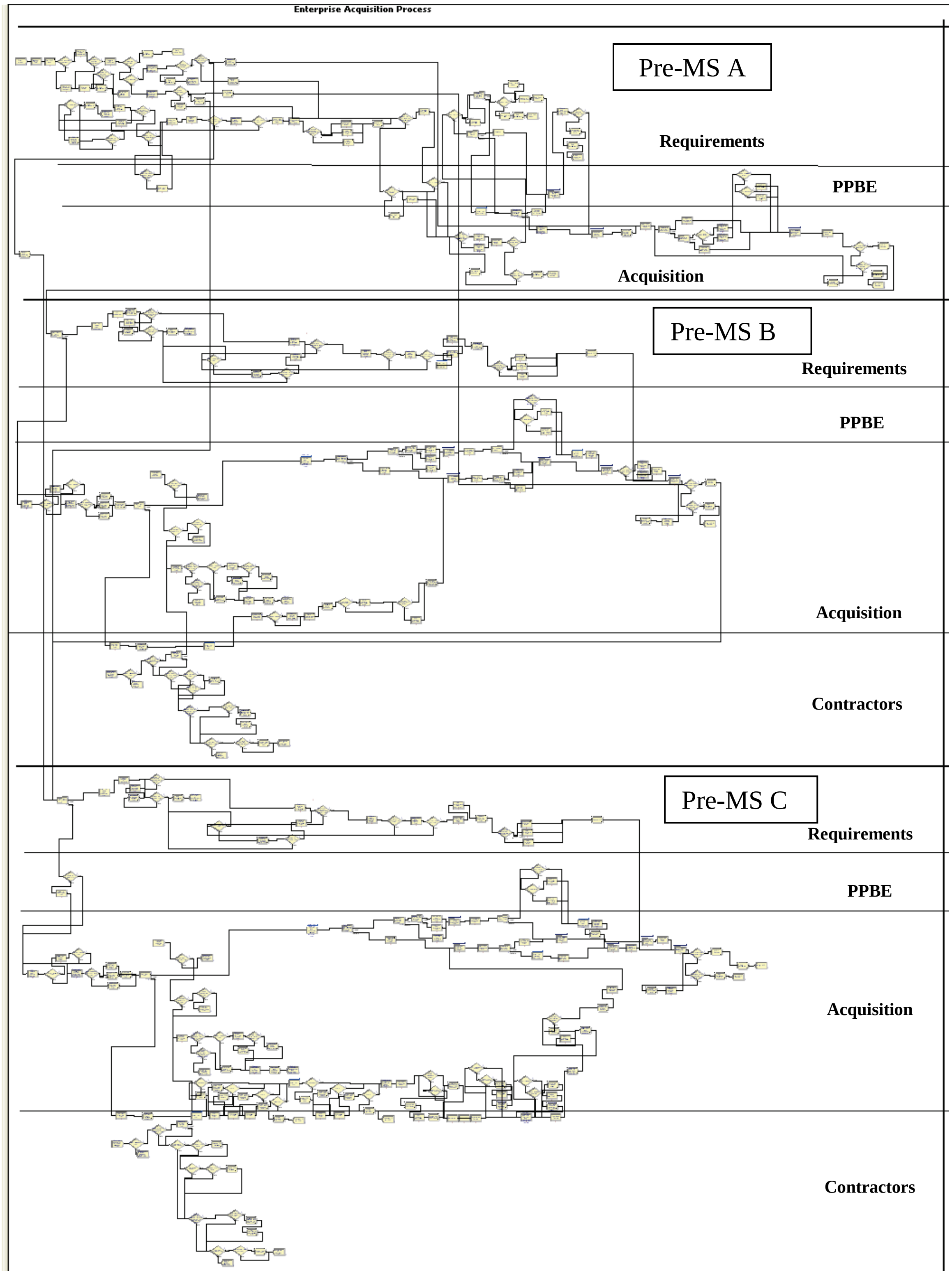


Figure 26: Final Model Representation

The final model depiction includes the learning and improvements described in the Verification and Validation chapter of this work. Graphically, it is also laid out a bit differently than the first conceptual model. However, the only substantial difference between the two is that the system phases are stacked one upon the other. Pre-Milestone A with the attending swim lanes--only three swim lanes as the contractor swim lane does not participate in this early phase--is at the top. The bold line separates it from Pre-Milestone B phase with its swim lanes and finally, the Pre-Milestone C phase with its swim lanes is at the bottom of the figure. The Pre-Milestone A phase has the most activity in the Requirements swim lane and the Pre-Milestone C phase has the most activity in the acquisition and contractor swim lanes.

There is one main entry to the system and four artificial uncertainty generators: two for pre-MS B and two for pre-MS C; one for political uncertainties, the other for other uncertainties; both will be described in detail later in this chapter. There are 29 different exit points in the process. A successful completion of MS C is just one of those 29; another example is an exit (the program being killed) at a requirements review step. There are 231 different processes depicted, each with a stochastic outcome. There are 192 decision points with probabilistic outcomes. There are 14 batching processes to combine flows from the 21 splitting functions. There are over 100 different information notations that assign variables, keep track of process information, or other items. There are 12 functions that stop further processing along a particular process path until another condition is met elsewhere in the model. These are useful, for example, to depict if something in the requirements process has to wait for another activity in the acquisition swim lane to be completed. A detailed description of the model appears in Appendix E.

Model Assumptions

The unit of analysis within the model is the individual program. Interaction effects or portfolio effects from other programs are not explicitly modeled but are tacitly taken into account by the

stochastic behavior of all of the processes and probabilistic nature of decisions throughout the model. These items were already mentally “taken into account” by the individuals whose reported process distribution data and decision point probabilities form the basis of the data in the model. These interdependencies were identified throughout the interviews as extremely important but also deemed to be nearly impossible to quantify.

Cost, schedule, and ACAT level are the individual attributes associated with the unit of analysis within the model. Other attributes not chosen were Technology Readiness Levels and/or the novelty of a given program. These can be considered for future work.

Further assumptions associated with the model are that overall program costs and schedules will either remain the same or increase--despite the very real possibility of a funding cut or schedule reduction. This approach is rational as a short-term decision on a given program may reduce costs and/or schedules at first, but the likelihood of requirements relief, which is an extremely rare event, remains minimal, and those requirements will need to be met at a later time, increasing the overall program development costs and schedule.

Uncertainty driven by political circumstances is artificially modeled by randomly generating a “program review” where the finances, program management, and other aspects of a program are “reviewed” for potential cuts and/or changes. A set driver of uncertainty, also artificially driven, is named simply “event happens” and is used to account for the stochastic nature of problems encountered in the execution of the development program, running the gamut from the impacts of “known unknowns” to “unknown unknowns.”

Conclusions

The model of the overall acquisition system is based on actual practice and demonstrated activity. The model also tacitly accounts for portfolio “interdependencies”--a problem identified in all interviews but deemed impossible to quantify. Furthermore, the model reflects “things as they really

are," not just the theoretical operation of the entire system. Finally, the model is robust enough that it can be programmed and will lend itself to simulation exercises, such as Monte Carlo simulation, hypotheses testing and sensitivity analyses.

The development of this model is important to gain a better understanding of the whole system. It addresses the concerns of other studies that have indicated only smaller portions of the acquisition system have been studied and whose recommendations often were ignored or unsuccessful. Currently, the author is aware of no other model that exists on this scale or scope. Since it may require decades to transit the existing process from beginning to end, and the process is constantly being changed and adapted, there is great difficulty conducting longitudinal analyses that reflect the actual state of the system at any given time. The following chapters will demonstrate how the model was verified and validated, along with testing various hypotheses to see how development program outcomes can be improved.

CHAPTER 6 – VERIFICATION AND VALIDATION

A model of this size and complexity encounters concerns about verification and validation. Verification is the idea that the model operates correctly and validation is the idea that the model correctly mimics the reality it is trying to represent. Both of these concerns will be addressed in this chapter. Nevertheless, it is important to remember that it is nearly impossible to verify a model of a complex system completely, but it is also important to obtain a degree of confidence in the model, its behavior, and its outcomes.

This chapter discusses how the model was both verified and validated. There are some unique features to this research worth noting. In some sense, two different models were both verified and validated, strengthening the overall confidence in the final model form. The first model to go through this process was the original model of the system done in a free-hand style. The second model to go through this process was the actual programming of the model in a setting that allowed for large-scale simulation. These will be elaborated upon further below, but the verification and validation done on each of these models constitutes a strong effort to verify and validate the larger model used in this research.

Verification of free style model

The task to ensure the model behaves the way it was intended was approached very methodically. As in the previous chapter, the initial forms of the model were drawn freehand in the program Dia. This program allowed for quick manipulation and easy navigation around the model. At the same time the model was being drawn free-hand, the model was also being documented. The documentation provided a great deal of information that could not be represented in the free-hand model drawing. For instance, the source of the information and the actual values for each of these data points was consolidated in this documentation. A great deal of time was spent combing through the

interview data as well as making call-backs and searching for other official documentation to substantiate all of the entries in the model.

During the process of drawing the model and documenting it, many of the implicit connections and underlying assumptions that had been carried by the author were made explicit. Several weeks of iterations were required to flesh out all of the assumptions.

Hand Modeling

Following this phase, an intensive period of working the system by hand was accomplished to test the logic and basic outcomes. Since the model was put together using only probabilities and random triangular distributions; it lent itself well to working the model by hand using a sheet of paper and one die. In some sense, checking the model by hand seemed tedious, but the exercise was fruitful as additional logic errors were found and other important insights were gained.

	Hand model #1	Hand model #2	Hand model #3	Hand model #4
Ending point	Stay in Sustainment system	Stay in sustainment system	Stay in sustainment system	Milestone A
Number of process steps	7	7	7	192
Final days	439	959	785	1222

Table 9: Example table of hand modeling trials

Regarding hand model #4, the exercise was terminated at Milestone A since the other two phases were similar in structure, with additional process steps, and the same kinds of logic would apply. However, one of the most important insights gained from this exercise was realizing a need to keep track of different timelines and various variable states. The model requires parallel processing of information and process activities, e.g. activities going on at the same time in the different swim lanes. Without this capability, any modeling by hand would quickly get lost in the details. Another one of the

key insights was the explicit modeling of the PPBE produced too much variation in outcomes, e.g. far too many programs were being “killed” than both the interviewees and personal experience suggested was the case and the process was not ending within the allotted time, since it is a continuous process and must keep its rhythm. At the rate at which the hand modeling was going, no program would ever make it to any milestone simply due to the PPBE modeling.

After a period of reflection, some of the different interviewee insights came to mind. The PPBE was a continuous process and was calendar-driven. The other processes were discrete and event-driven. Was it possible the impacts of the PPBE were already accounted for elsewhere in the model? After much thought, an answer emerged: the other process distributions likely already accounted for the probabilities of whatever might by induced by the PPBE. It was manifest in whatever heuristic the interviewees used to come up with their probabilities and triangular distributions. It accounted for the unknowns, including those from the PPBE, within those items. This realization simplified the model significantly. Now the PPBE processes swim lane could be used to show the explicit impacts upon individual programs, such as a step to “check for available funding,” etc.

PPBE modeling

To further probe this realization, the PPBE, as originally modeled, was “validated” by hand separately. The PPBE alone was well-suited for such an exercise. It really was a self-contained model that occasionally interacted with the other swim lanes--specifically the acquisition swim lane.

	Hand model #1	Hand model #2	Hand model #3	Hand model #4	Hand model #5
Process steps required	46	48	14	7	279
Days elapsed	757	757	350	64	5477

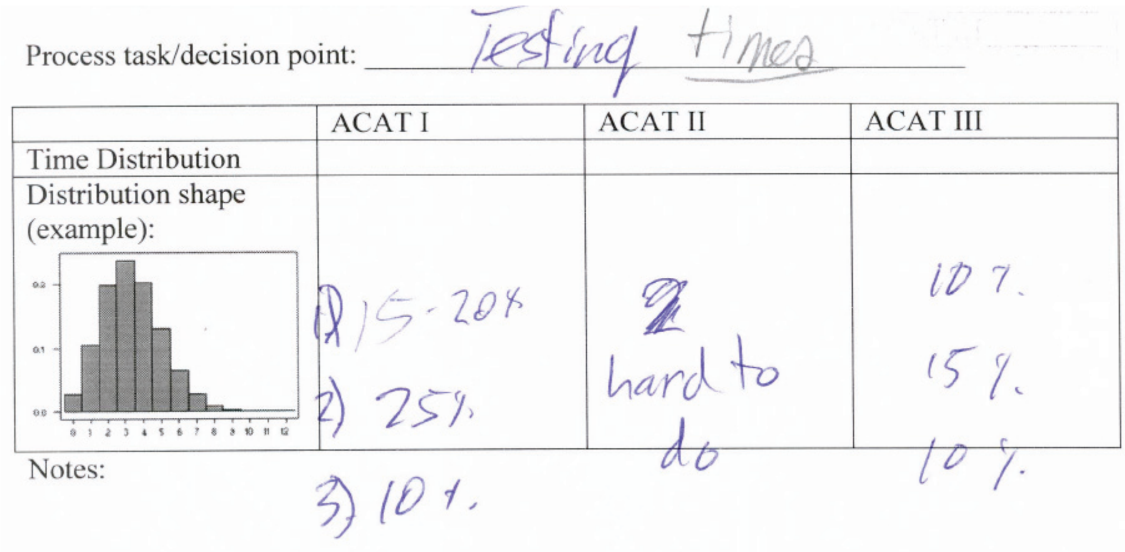
Table 10: Explicit PPBE hand-modeling

The modeling of the PPBE by hand mirrored both the practical experience by the author as well as that reported by the various interviewees. For example, some of these outcomes were: many decisions being revisited; many opportunities for new items to be inserted into the system; many opportunities, greater than 10 touch points, where program budgets could be manipulated and/or changed. Nevertheless, the direct impacts of these changes would be seen only at specific intervals, such as a specific Milestone decision, since nothing is really "firm" until the Budget is made law and by then, programs, by law, must have funds "secured" for execution of contracts and other work. Changes that were made to budgets were not "real" until its actual passage by Congress and Presidential signature. Therefore, it was reasonable to "assume" discrete events within the PPBE that could be associated with the rest of the swim lanes, such as a check for available funding. Any changes forced upon a program due to budget problems would be manifested in the program review cycles already built into the model. The most impact the PPBE had on individual programs was expressed in the very early phases of the program lifecycle--if you didn't have a budget line item established, your likelihood of being stopped was extremely high. However, this was also manifest in the requirements swim lane--and was easier to follow than the PPBE.

Validation of free style model

Upon completion of the hand modeling and model documentation, a large printout of the model was created. The model required nearly 20 feet of paper to print in a legible (readable) format on poster size paper. This printout of the model was then taken to representatives of the Requirements, PPBE, and Acquisition swim lanes for their review and feedback. The model documentation was part of the discussion with these individuals, along with the results of the hand modeling. In addition, specially prepared papers were brought to allow reviewers to add detail to, modify, or clarify model representations. The special preparations consisted of putting together a specific format so that the feedback would be consistent, as well as easy to process. Of particular importance was gathering or

validating the probabilities and time distributions gleaned from the previous interviews of the two studies described earlier. Some of the experts consulted were those that had participated in earlier studies. However, many of them were new to the study and provided a fresh perspective and candid insights. A scanned image of one such feedback sheet is shown below.


Process task/decision point: Testing times

	ACAT I	ACAT II	ACAT III
Time Distribution			
Distribution shape (example):	1) 15-20% 2) 25% 3) 10%	hard to do	10% 15% 10%

Notes:

Figure 27: Example of Scanned image of model feedback form

For instance, this figure asked for feedback on the time needed to do developmental testing, as a percentage of the original contract length. The feedback shows there are some differences between different ACAT levels, and, in particular, the ACAT II programs were hard to estimate. The data for ACAT III programs was subsequently used for the ACAT II programs.

A sampling of their comments included feedback such as: “That sounds about right.” “This needs to be added.” “Where is this [a particular task or item] represented in your model?” “We can’t begin this task here until this [another item from another swim lane] is completed.” Many of these items were not explicitly documented in the literature, but were extremely important to the behavior of the system. One of the other more important items gained was learning how the system treated ACAT I, II, and III programs. On paper, in the official documentation, not much mention is made about the time required to work these different programs. However, practical experience suggested otherwise.

Therefore, a great deal of time and effort was made during this trip to collect any ACAT data that was different or caused a process to be different in its time distribution outcomes or a decision point to have a different set of probabilities. Surprisingly, there were significant differences in many more places than realized.

These interviewees were encouraged to write, scribble, change, annotate, as they felt needed to be done on the paper printout of the model, its documentation and the other paper feedback mechanism. The following image shows some of the individual mark-ups made on the printed model. The section of the model shown is the Pre-Milestone A Phase.

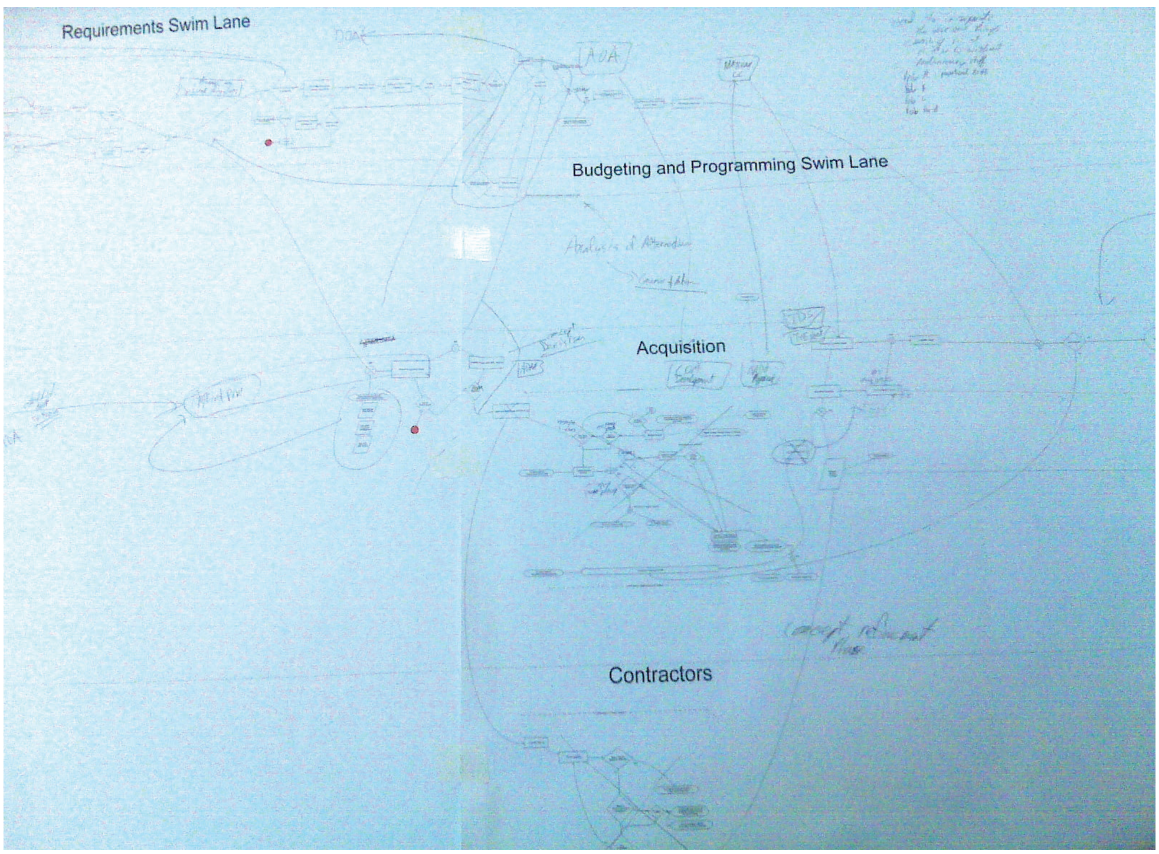


Figure 28: Image of marked-up paper model

As depicted above, many important areas of the overall process had not been represented or correctly depicted in the original model--but enough information was there that all interviewees were able to understand and follow the process depiction. In the end, every swim lane would require

changes to incorporate the feedback. As the changes made were cumulative, every person could see the contributions made by the previous person and often commented positively on the changes suggested. Follow-up telephone calls were made over the next few days following to make sure that the changes were understood and correctly incorporated into the model.

Verification of computer simulation model

Upon the choice of the research version of Rockwell Software's Arena to construct a more explicit model and later conduct discrete-event simulation, the model was programmed into the software. The software uses the Windows platform as its operating system. All of the changes and feedback given to the free-style model were accommodated in this representation.

From a coding perspective, the software has a lot of error checking and prevention logic built into it. First, there is a function that checks to see that every model item is connected to something else. It makes sure there are no orphan processes or decision points anywhere. It checks to see that entry points and exit points exist, all variables are properly defined--including any mathematical or logical formulas--and other parameters are properly set.

The second way that the software ensures it can be verified is that it offers an animation feature. This allows the programmer to watch a simulation as it proceeds to make sure that the model behaves appropriately. This is especially helpful in terms of a complex system like this one. It enables the programmer to visually see where the different parallel processes are in the process execution and can give the programmer some assurance that the model behavior is correct.

The third major way the software assists with the verification of the model is by allowing a step function to occur. This allows the programmer to go through the model step-by-step and, coupled with the animation feature, see how the system is behaving. Temporary variables and transitory data elements are available for examination during verification. The programmer can also highlight specific variables, entities, tasks, etc., of interest for specific reporting or more information.

All three of these methods were used to de-bug and verify the performance of the model. Many hours of work and analysis were required during this stage of the research. The model was verified on a laptop computer with a 1.79 GHz Intel Pentium M processor and 1.5 GB of RAM, running Microsoft Windows XP Professional Version 2002 Service Pack 3. Every iteration requires 2 to 4 seconds but slows down significantly after 50000 iterations, probably because of the limitations of the Windows file management system and the size of the data files. The model now runs without error messages or strange behaviors through 100,000 iterations. Finally, the software creates a Microsoft Access database and also uses a special database query program to develop reports and output indicators--all of which help with debugging.

Additionally, the software comes with specialty input/output analyzer and multi-scenario analysis software that can be used after a simulation run has completed. These tools also allow the data to be converted into non-proprietary formats for further analyses by other tools. Random checks of different iterations and their respective outcomes did not turn up any unusual behaviors. At this point, the model was considered to be verified.

Validation of computer model

It is important for the model to have both internal and external validity--evidence to support the relationship "between or among its variables" and if said relationship generalizes beyond the specific domain application of this study--for any understanding of causal relationships [121]. At first glance, one could argue the model has face validity. The outcome measures ring true to the author's practical experience. The many experts consulted for the model and, that provided feedback, expressed support of its underlying structure and outcomes. Notwithstanding all of this, a significant effort has been made to gather and obtain outcome measures of the real world system in a number of cases. The cases were chosen at random and are representative of the overall system behavior.

The data sources are varied. They range from open source literature to internal USAF or DOD databases. A list of these sources follows:

- SMART (System Metric and Reporting Tool) data access
  - MAR (Monthly Acquisition Report) scores (all programs of record; some since 1990s)
  - PoPS (Probability of Program Success) scores (all programs of record since 2006)
- DAMIR (Defense Acquisition Management Information Retrieval) data access
  - SAR (Selected Acquisition Report) data (archives; current; preliminary); APBs (Acquisition Program Baseline), etc
- SACOM data access
  - Acquisition manning data (requested/desired and allocated)
- AF Systems Library access
  - PEO system groupings; ACAT levels for programs; PMs; locations
- OSD Acquisition Management data access
  - All PMDs (Program Management Directive) since 1989
- AF Financial data access
  - PEM assignments; PE to program mapping; P & R (Planning & Requirements) documents, AF budget submissions, archives, etc.

Figure 29: Data Sources for Model Validation

Various GAO reports indicate that Acquisition Programs are on average more than two years behind schedule and several billion dollars over budget, among other things [1]. Rather than rely upon the GAO report for the data to validate the model's outcomes, a separate, independent look at these data sources for specific and actual program data was completed. With the assistance of an Air Force officer who just completed his Masters degree at the Air Force Institute of Technology, a process of tabulating open-source, Air Force, and Government information regarding program performance in terms of cost and schedule of multiple programs at various ACAT Levels was conducted. Over a three week period, the above named sources were combed for information relating to outcome measures of acquisition programs. The goal was to obtain outcome measures for at least three and preferably five or more acquisition programs per ACAT level.

Many of the data sources are only available from within the .mil computer domain network. The ACAT list on the Air Force Systems Information Library[50] was used to determine which programs to search for. This site lists all of the Air Force ACAT I, II, and III programs/projects. PMDs (Program Management Directive) and ADMs[51] (Acquisition Data Memorandum) were examined, but these didn't provide much information of use in finding outcome measures. PMDs refer to total programs, e.g. B-2, and not to specific projects, e.g. B-2 RMP, and were therefore less helpful. There were typically only a few ADMs for each project, and these focused more on general program management issues. However, in some cases, information from these documents was used to cross-reference data found in SMART[52] (System Metric and Reporting Tool). While the Air Force budget[53] and SARs[54] were a primary data source, the cost data residing in SMART was used because they appeared to be the most up to date and agreed most with other reported data.

In the course of this exercise, every single system listed on the AF Systems List was examined. There are 164 programs of record as of December 30, 2008. 39 of these programs are of the ACAT I variety. 23 programs are ACAT Level II. 102 programs are ACAT level III. There is no accurate count of the number of non-ACAT programs, but it is likely in the thousands. Among the ACAT II and III programs, many had no MAR reports available or had been recently updated. This reason alone eliminated most of these programs from our sampling effort.

[50] https://pml.wpafb.af.mil/Default.asp?consent=89

[51] https://extranet.acq.osd.mil/dab/adm/index.html

[52] https://www.my.af.mil/smart/SMART_APP/

[53] http://www.saffm.hq.af.mil/budget/

[54] http://www.acq.osd.mil/ara/am/sar/

ACAT I Programs

For active ACAT I programs, DAMIR[55] and SMART were used for the majority of the data collected. For inactive programs, or those no longer in active development, DAMIR would have the program listed but no information available; consequently, the results of this examination do not contain any “inactive” programs. DAMIR typically has six different data sources to pull information from. These include DAES (Defense Acquisition Executive System)/Web Services, SAR, APB, SAR Baseline, POM, and BES. Interestingly, each of these data sources often provided different dollar figures, schedule data, etc. The DAES/Web Sources data source produces a “Current Status Report.” This is a very detailed report that pulls its data from the Acquisition Program Baseline (APB). The APBs are helpful because they show schedule and cost history. However, it is important to note that the APBs are a “snapshot in time” and are typically issued only upon the completion of a milestone or significant program change. Therefore, the most recent APB can sometimes be several years old, and it is difficult to determine if this new APB constitutes a baseline “reset.” Despite this, the numbers and dates reported in SMART tend to agree with the most recent APB.

ACAT II/III Programs

SMART is the only database that reports data for ACAT II and ACAT III programs. The mandate to use SMART to report on all ACAT programs was recently implemented in the mid-2000s, according to the first study’s interviewees. The GAO, DAMIR and the SARs only report on MDAPs (Major Defense Acquisition Programs)--which are ACAT ones. While each program from the ACAT List had a page in SMART, the data for ACAT II and III programs was spotty. Most of the workspaces were not used and the data was not always up to date. Few of the programs reported Milestone B or Milestone C dates, so this limited what programs could be used for validation. Most of the smaller programs worked from

[55] http://www.acq.osd.mil/damir/

specific schedule tasks instead of milestones. If reliable milestone schedule information wasn't found, the program was eliminated for consideration, and no attempt to track down the cost data was made. For the programs that did post MARs, these documents were very helpful for tracking schedule and costs. It is important to note that the oldest MAR available was usually a couple years into the program's execution, so the first few years of MARs were often missing. This doesn't mean these programs never completed these MARs, it just means they are not stored in a common repository and this was one of the reasons SMART was developed. Another problem with finding ACAT II and III data was that SMART only showed current programs. These programs are typically shorter in duration than ACAT Is, so most of the active ones listed with data tend to be early in their development, Pre-MS B and earlier, and it could be too early to identify tangible cost or schedule growth.

Actual Data Results

The following table shows the final tabulated results of the sampled data. The data is unfortunately difficult to interpret. For instance, the percentages of cost variance and schedule variance are tied to the last baseline and the information is taken from the SMART database "contract performance" workspace. Every time a program is rebaselined, a new APB is issued. This changes everything and becomes the new measuring stick by which all things are measured. In some respects, this is understandable, especially when the scope of a program changes dramatically due to changing program end item quantities or after a major ECP adds additional major requirements to a program. The negative side of the rebaselining, however, comes from using it as a way to cover or minimize other problems encountered. Where this was done, the authors have no way to obtain additional insight into the original cost and schedule data.

A short discussion explaining the dates listed in the table below will help the reader interpret and understand the data. Dates were pulled from the APBs and the SMART Schedule workspace. Often, there was difficulty tracking down a program start date, so the first date reported was used in these

cases. For older programs, Milestones I, II, and III are reported, as a previous version of DOD 5000 used this nomenclature. For the purposes of the project, these milestones are similar in nature to the existing nomenclature of milestones and therefore were treated as if these were, respectively, Milestones A, B, and C. If the actual completion date was still in the future, the projection was entered into the database's actual completion date cell and italicized. Among the impressions about the data is that some of the schedule dates reported in SMART, especially the older ones, were entered just to match the estimated dates. Anytime an "actual" date reportedly happened on the first of the month, suspicions were raised about the quality of the data. What real life event always falls exactly on the first of the month?

The cost and schedule variance data listed in the table are taken directly from the SAR report information about that program. However, this data is only included to show how easily misleading the data can be. The reference point from which the cost and schedule variance is measured is the most recent APB; therefore, it does not measure total cost and schedule variance over the life of the program. Again, to be fair, the most current APB reflects the current state of the acquisition effort, including whatever changes to scope, quantity and other items have been agreed to by industry and the government. Acquisition managers would like to be evaluated upon program performance from the most recent APB, not from the total program costs and estimates made long before they ever became involved with a program.

Some additional discussion about the cost data listed will help the reader better understand the tabulated data. Costs are reported in then-year millions of dollars. Total Acquisition Cost is represented as a sum of RDT&E, procurement costs, and also includes MILCON costs when reported. Projected total costs are referenced from the APBs. Unfortunately, it is not known if the APBs were released in conjunction with a milestone event or at some other time, such as a mandatory "reset" after a Nunn-

McCurdy[56] breach. But data from all available past APBs is listed and this will give some idea of the overall program growth from Milestone B, the official program “start,” to the current APB date. Actual total costs were pulled from the SMART cost workspace because SMART purports to have the most up-to-date numbers that the Air Force reports in budgets, etc. Caution must be exercised when highlighting programs where total costs have been reduced. Often times, the services have simply decided to reduce the quantity being bought. Such a program change often masks the cost growth that has actually occurred on a program. For this reason, the acquisition unit cost data and procurement unit cost data is also included. For example, if total purchase quantities were reduced, the unit cost data should reflect significant increases. What is difficult to ascertain is how much of that increase can be attributed to other cost growth. The program acquisition unit cost and average procurement unit costs were pulled from the APBs. For unit costs, Milestone A was pulled from the first concept APB. The first developmental APB provided data for Milestone B, and for Milestone C the unit costs were reported in the first production APB.

There were no APBs for ACAT II and III programs and they never seemed to use the cost workspace in SMART. Therefore, the BAC (Budget at Completion) workspace on the MARs was used to determine projected and actual costs. The projected cost was taken from the oldest MAR available in SMART, even though this, in most cases, is not the oldest MAR. It cannot be guaranteed that these are the original BACs for the program for the reasons previously explained, but they are the best available information. The actual costs were pulled from the BAC on the most recent MARs, typically March 2009.

[56] Named after the sponsoring legislators, this law established mandatory cost and schedule overrun thresholds that require a thorough examination, reevaluation and justification of acquisition programs. A program that breaches these thresholds is in jeopardy of cancellation or a serious reduction of Congressional support.

Program Name	Initial ACAT Level	Initial Start Date	Source	Initial Milestone of Entry	Projected Milestone Dates			Source	Actual Milestone Dates			Source	Initial Analysis of Schedule		
					A	B	C		A	B	C		Projected B to C	Actual B to C	% change
B-2 RMP	I	17 Aug 2004	SMART Schedule	B	-	Jul 2004, Sep 2004	Feb 2007, Sep 2008	Jan 2009 APB	-	17 Aug 2004	4 Sep 2008	SMART Schedule	30 months	49 months	63%
C-5 RERP	I	1 Feb 2000	SMART Schedule	B	-	Nov 2001	Dec 2006, Mar 2007, Mar 2008	Jun 2008 APB	-	5 Nov 2001	25 Mar 08	SMART Schedule	61 months	88 months	44%
JDAM	I	11 Sep 2000	SMART Schedule	A	Oct 1993	Oct 1995, Sep 1995	Jul 1999, Apr 1998, Feb 1999, Nov 1999, Nov 2000	Oct 2002 APB	1 Oct 1993	1 Sep 1995	1 Mar 2001	SMART Schedule	34 months	66 months	94%
F-22	I	1 Oct 1986	SMART Schedule	A	Oct 1986	Jun 1991	Dec 1999, Jul 2001, Mar 2002, Sep 2002, Jul 2003, Mar 2004, Sep 2004	May 2007 APB	1 Oct 1986	1 Jun 1991	1 Mar 2005	SMART Schedule	102 months	165 months	62%
JPATS	I	1 Jan 1993	SMART Schedule	A	Jan 1993	Jun 1994, Feb 1995, Aug 1995	Jun 1998, Jan 1999, Sep 1999, Dec 1999, Nov 2000, Nov 2001	Sep 2007 APB	1 Jan 1993	1 Aug 1995	1 Nov 2001	SMART Schedule	34 months	75 months	121%
AMRAAM	I	1 Nov 1978	SMART Schedule	A	Nov 1978	Nov 1982, Sep 1982	Jun 1987	May 2008 APB	1 Nov 1978	1 Sep 1982	1 Jun 1987	SMART Schedule	45 months	45 months	0%
B-2 EHF Increment 1	I	22 Feb 2007	SMART Schedule	B	-	Feb 2007	Jul 2011	May 2007 APB	-	22 Feb 2007	*31 Jul 2011*	SMART Schedule	52 months	52 months	0%
C-130 AMP	I	1 Nov 2005	SMART Schedule	B	-	Jul 2007	Jun 2008	Feb 2008 APB	-	31 Jul 2007	*30 Jun 2009*	SMART Schedule	11 months	23 months	109%
C-17A	I	1 Aug 1981	SMART Schedule	A	N/A	Feb 1985, Nov 1987	Dec 1988, Jan 1989	Mar 2005 APB	N/A	1 Nov 1987	1 Jan 1989	SMART Schedule	13 months	14 months	8%
C-5 AMP	I	1 Jan 1999	SMART Schedule	B	-	Jan 1999	Feb 2003	Aug 2007 APB	-	1 Jan 1999	1 Feb 2003	SMART Schedule	49 months	49 months	0%
JASSM	I	20 Sep 1995	SMART Schedule	A	Jun 1996	Jun 1998, Nov 1998	Apr 2001, Jul 2002, Oct 2003	Jul 2004 APB	13 Jun 1996	09 Nov 1998	25 Feb 2004	SMART Schedule	29 months	63 months	117%
SDB I	I	1 Oct 2003	SMART Schedule	A	Aug 2001	Oct 2003	Apr 2005	Apr 2005 APB	1 Aug 2001	1 Oct 2003	29 Apr 2005	SMART Schedule	18 months	18 months	0%
B-1 FIDL	II	12 Dec 2003	SMART Schedule	B	-	Apr 2005	Jul 08	SMART Schedule	-	16 May 2005	*29 May 2009*	SMART Schedule	38 months	48 months	26%
B-52 CONECT	II	1 Sep 2003	SMART Schedule	B	-	Feb 2004	Dec 2008	SMART Schedule	-	6 Jul 2004	*23 Dec 2009*	SMART Schedule	42 months	66 months	57%
IBS	II	2 May 2001	SMART Schedule	B	-	May 2001	Jun 2006	SMART Schedule	-	2 May 2001	20 Jun 2006	SMART Schedule	61 months	61 months	0%
F-15 APG-63(V)3	II	16 Sep 2008	SMART Schedule	C	-	-	Mar 2009	SMART Schedule	-	-	*31 Mar 2010*	SMART Schedule	6 months	18 months	200%
B-1 VSD Upgrade	III	8 Mar 2006	SMART Schedule	B	-	Mar 2006	Feb 2009	SMART Schedule	-	8 Mar 2006	*15 Jul 2009*	SMART Schedule	35 months	40 months	14%
B-1 INS Replacement	III	29 Nov 2007	SMART Schedule	B	-	Nov 2007	*May 2010*	SMART Schedule	-	29 Nov 2007	*1 Oct 2010*	SMART Schedule	30 months	35 months	17%
JICO Support System (JSS)	III	13 Aug 2004	SMART Schedule	B	-	Aug 2004	Mar 2009	SMART Schedule	-	13 Aug 2004	*31 Sep 2009*	SMART Schedule	55 months	61 months	11%
Combat Key Generator (KOK-13)	III	14 Oct 2005	SMART Schedule	B	-	Jan 2007	*Sep 2009*	SMART Schedule	-	17 Jun 2007	*15 Jul 2009*	SMART Schedule	27 months	25 months	-7%

Table 11: Multi-source Acquisition Program Schedule Data

Program Name	Prog Acq Unit Cost ($M) at Beginning of Milestone				Source	Avg Proc Unit Cost ($M) at Beginning of Milestone				Source	Projected Total Acquisition Cost ($M)	Source	Actual Total Acquisition Cost ($M)	Source	% Cost Variance (Then-Yr)	Source	% Schedule Variance	Source
	A	B	C	Most Recent		A	B	C	Most Recent									
B-2 RMP	-	58.095	67.420	67.420	Jan 2009 APB	-	39.150	48.408	48.408	Jan 2009 APB	1220, 1348.4	Jan 2009 APB	1348.4	SMART Cost	0.4	Sep 08 SAR	-1.0	Dec 07 SAR
C-5 RERP	-	88.047	147.963	147.963	Jun 2008 APB	-	78.293	123.308	123.308	Jun 2008 APB	11093.9, 10020.6, 11004.2, 7694.1	Jun 2008 APB	7667.9	SMART Cost	7.6	Sep 08 SAR	-5.5	Jun 08 SAR
JDAM	0.070	0.038	0.029	0.025	Oct 2002 APB	0.056	0.033	0.024	0.023	Oct 2002 APB	5240.3, 3392.3, 2606.7, 5630.8	Oct 2002 APB	5473.0	SMART Cost	29.6	Sep 08 SAR	N/A	N/A
F-22	-	152.946	338.805	339.768	May 2007 APB	-	122.333	186.933	186.933	May 2007 APB	3282.0, 99109.0, 72364.9, 64340.1, 65933.2, 61760.8, 68833.3, 71785.3, 61323.7, 61498.0	May 2007 APB	64016.2	SMART Cost	4.6	Sep 08 SAR	N/A	N/A
JPATS	9.596	5.689	6.438	7.230	Sep 2007 APB	9.108	5.068	6.009	6.700	Sep 2007 APB	6658.0, 4050.6, 3997.0, 4555.8, 5041.1, 5552.8	Sep 2007 APB	5515.0	SMART Cost	11.5	Sep 08 SAR	N/A	N/A
AMRAAM	0.484	0.460	0.849	1.141	May 2008 APB	0.430	0.413	0.761	1.002	May 2008 APB	8340.2, 11199.2, 11592.4, 13112.4, 13327.9, 19417.3	May 2008 APB	21477.7	SMART Cost	30.9	Sep 08 SAR	-3.8	Dec 07 SAR
B-2 EHF Increment 1	-	33.624	N/A	33.624	May 2007 APB	-	7.747	N/A	7.747	May 2007 APB	706.1	May 2007 APB	550.0	SMART Cost	-3.6	Sep 08 SAR	-1.4	Dec 07 SAR
C-130 AMP	-	7.640	N/A	26.622	Feb 2008 APB	-	6.538	N/A	18.186	Feb 2008 APB	3965.4, 4574.2, 4865.9, 5910.1	Feb 2008 APB	5783.0	SMART Cost	102.8	Sep 08 SAR	-14.6	Dec 07 SAR
C-17A	N/A	178.355	199.104	326.074	Mar 2005 APB	N/A	151.369	171.871	279.581	Mar 2005 APB	37454.6, 41811.9, 34802.0, 22476.4, 43261.7, 45860.6, 58693.4	Mar 2005 APB	61185.6	SMART Cost	55.1	Sep 08 SAR	-8.9	Dec 07 SAR
C-5 AMP	-	N/A	14.038	12.939	Aug 2007 APB	-	N/A	12.939	9.453	Aug 2007 APB	856.3, 1449.2	Aug 2007 APB	1340.2	SMART Cost	22.4	Sep 08 SAR	N/A	N/A
JASSM	1.242	0.840	0.914	0.914	Jul 2004 APB	0.916	0.504	0.702	0.702	Jul 2004 APB	3034.7, 2073.3, 3130.8, 3313.6, 4070.8, 4981.1	Jul 2004 APB	7242.6	SMART Cost	30.2	Sep 08 SAR	0.2	Dec 07 SAR
SDB I	N/A	0.074	0.074	0.074	Apr 2005 APB	N/A	0.059	0.059	0.059	Apr 2005 APB	1786.3	Apr 2005 APB	1482.9	SMART Cost	-17.3	Sep 08 SAR	N/A	N/A
B-1 FIDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	117.7, 117.8, 117.9, 117.6, 117.1, 116.0, 138.9, 159.4, 160.3, 160.2, 162.4	May 2006 MAR	291.0	Mar 2009 MAR	N/A	N/A	N/A	N/A
B-52 CONECT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	195.7	Oct 2005 MAR	195.7	Mar 2009 MAR	N/A	N/A	N/A	N/A
IBS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	85.8, 85.4. 85.1, 86.0, 92.0, 116.2, 115.5, 148.8, 149.6	Jul 2003 MAR	151.3	Mar 2009 MAR	N/A	N/A	N/A	N/A
F-15 APG-63(V)3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	180.1	Nov 2008 MAR	180.3	Mar 2009 MAR	N/A	N/A	N/A	N/A
B-1 VSD Upgrade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51.1	Aug 2008 MAR	51.1	Mar 2009 MAR	N/A	N/A	N/A	N/A
B-1 INS Replacement	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	62.3	Aug 2008 MAR	62.5	Mar 2009 MAR	N/A	N/A	N/A	N/A
JICO Support System (JSS)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38.7, 45.8, 54.0, 57.4, 56.2, 57.7, 57.8, 57.7, 62.6, 57.7	Aug 2006 MAR	71.4	Apr 2009 MAR	N/A	N/A	N/A	N/A
Combat Key Generator (KOK-13)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.8, 8.3	Apr 2008 MAR	9.0	Apr 2009 MAR	N/A	N/A	N/A	N/A

Table 12: Multi-source Acquisition Program Cost Data

A few limitations about this data sampling effort need to be noted. Accessing the information databases was probably the biggest difficulty during this effort. By design, the information is not widely

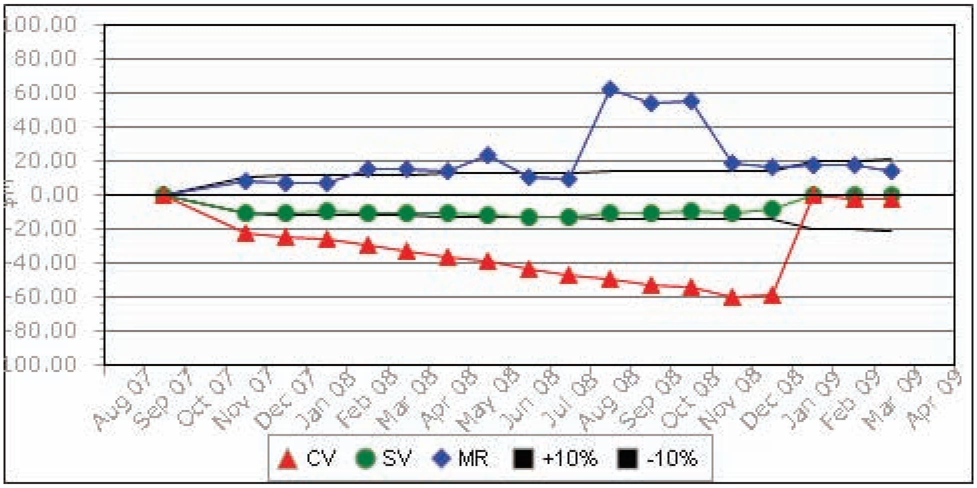
available. Even after securing permission for read-only access to these databases, on a few occasions, the systems were too slow to be usable or not functioning at all. For example, many interviewees during the first study also commented on the "speed" or lack thereof of the online management tools and information repositories and their personal frustration with these systems.

Across the many different reports and databases available for ACAT I programs, there is much conflicting data. A great deal of time was spent comparing and re-checking the data to determine which figures where the most accurate. In the end, the best databases (APBs and SMART) were subjectively selected because of reasons previously cited and efforts were made to use them exclusively for all information on each program. This decision was made to mitigate biases across databases. This also enabled one to compare the different programs as reported from the same database source. Unfortunately, this decision also eliminated some programs from consideration because sometimes data was missing from these "better" databases too.

As mentioned earlier, there is little information on ACAT II/III programs. The second page of the MARs is really the only place where cost and schedule information could be found, but even then most of the ACAT II and III programs did not provide such data.

The GAO uses DAMIR as the source of information for its many reports on the state of the acquisition system and the source of DAMIR's info appears to be the SMART database. The recent GAO report on Acquisition gives a good reference point for the validity of the data found. They reported that in the last year, 95 of the Pentagon's largest weapons programs have exceeded their budgets by a combined total of $295 Billion and are, on average, two years behind schedule [1]. Therefore, since SMART appeared to be the original source of all of this data, it was selected as the best database overall for this data collection project. Because ACAT II/IIIs typically use schedule tasks instead of milestones, the contract performance tables on the second page of the Monthly Acquisition Reports (MARs)

provided the best way to track cost variance (CV) and schedule variance (SV) (example shown below). Unfortunately, many of the ACAT IIIs do not have these charts.



Contract Number: Fxxxxx-0x-D-xxxx	**Percent Complete:** 73.0%	**BAC:** $291.0M	**CPI:** 0.99
Contractor: xxxx Company	**Data Source:** CPR	**EAC (Ktr):** $291.0M	**SPI:** 1.00
Contract Type: CPIF	**As Of Date:** Feb 2009	**EAC (SPO):** $291.0M	

Figure 30: Example Contract Performance Tables as found on Page 2 of each MAR

Charts like these show a lot of information that a program manager is expected to use in managing a program. Visually, the data shown includes lagging measures designed to show how a contractor is spending its money (or using its resources) according to the plan and also whether or not the schedule is being met according to plan. Any favorable variances are reflected with a positive number; a negative result is unfavorable. For instance, Cost Variance (CV) is the result of the Budgeted Cost for Work Performed (BCWP), or the value of work accomplished, minus the Actual Cost of Work Performed (ACWP). Schedule Variance (SV) is the BCWP minus the Budged Cost for Work Scheduled (BCWS), or the value of work planned to be done. Variance at Completion (VAC) is the Budget at Completion (BAC) minus the Estimate at Completion (EAC). Cost efficiency (CPI) is the ratio of BCWP to ACWP. Schedule efficiency (SPI) is the ratio of BCWP to BCWS. For these efficiencies, a favorable ratio is greater than 1.0. An unfavorable ratio is less than 1.0. Variances and performance indices help a

program manager know where and how to apply its Management Reserve (MR) funds to help the program as much as possible meet cost and schedule targets.

One of the more interesting observations about the data was that by all appearances, it seemed only those programs in "trouble" were the ones consistently tracked or the ones that seemed to have the greatest variance shown in their metrics from established baselines. Further, in an effort to avoid costs, it seemed that many of the Earned Value Management requirements (contract performance metrics) were waived early in programs and not required for most ACAT III programs. Usually, other reporting requirements were also negotiated away in final contract discussions as a cost saving measure. This may have been prudent at the time of the decision to do so in order to "save" money, but it makes it more difficult for researchers to obtain cost and schedule information and to understand these outcome measures. It also reinforces, perhaps incorrectly, the notion to the outside observer that performance is the key driver for all of these systems, and therefore, cost and schedule deviations are not only expected, but acceptable.

A final concern about using this program information for validation purposes is that the official definition of a program begins at Milestone B--and the scope of this model ends at Milestone C. Much of the Pre-Milestone B data appears to be suspect in nature, i.e. dates begin exactly at the start of a month and are listed as happening exactly on time and without delay--which runs counter to the interview data collected across the two different studies in Chapters 3 and 4. Therefore, for validation purposes, the data that will be used for validation of time elapsed will be existing data between Milestone B and Milestone C. As the time distribution ranges take into account scope changes and various other items of turbulence, the initial dates listed will be used as the baseline to measure against the actual dates.

Validation of cost data in the model was not done due to the multiple methods of cost accounting used that tend to obscure true cost reporting. As mentioned earlier, the closest attempt at a

fair way to measure cost outcome measures objectively occurs in the per unit cost data, but even this data does not provide the granularity needed into the reasons why unit costs changed, e.g. change in quantity ordered or other cost growth.

The model does not calculate per unit costs, rather it contains mechanisms to track cumulative cost data. Since schedules are tied to costs, the schedule portion of the model was assumed to be a representative surrogate for program costs. Therefore, reporting cost data from the model was deemed as redundant for this exploratory effort. Modeled cost data will not be reported or included in this work. Future work and additional analysis might be able to tease out actual cost data in a way that would allow additional insights and comparison to the model, especially to validate the cost data coming out of the model.

Comparison of model outcomes and actual data – Final Validation

Statistical tests allow one to have a level of confidence in the data that has been obtained and also to find if there are valid relationships between data sets. In the case of the model, the output is represented in an elapsed amount of time. For the data presented in this section, the model went through 10,000 iterations to build up a proper sample size. Actual data was also gathered to determine an elapsed amount of time between acquisition milestones.

When comparing data, typically we are encouraged to see if there is any statistical relationship between the data. In this case, we have two sets of data, one from a computer simulation and the other from actual events. One represents the model's effort to define the distribution of outcomes for programs between Milestone B and Milestone C. The other represents actual data for the same time span. The hypothesis being tested is to determine if the means of the data are the same or different from each other's. The main assumption is that the data are normally distributed. Historically, the student's t-test is recommended when there are smaller samples. However, Ruxton suggests the unequal variance t-test is a superior alternative to the student t-test and the Mann-Whitney U test

[122]. The unequal variance t-test will be used to test the hypothesis. It involves the calculation of a t statistic that can be compared with the appropriate value in standard t tables. This is the representation of this calculation. X is the mean of the sample. S^2 is the unbiased estimator of the variance of the two samples and n is the number of the participants. The subscripts distinguish the two samples from each other.

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{\overline{X}_1 - \overline{X}_2}}$$

where

$$s_{\overline{X}_1 - \overline{X}_2} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$ **[123]**

Figure 31: Unequal sample-t test

All ACAT results vs all actual data

The following diagram is a histogram of all model data for all ACAT programs completing Milestone C that had no deviations from the “normal” process, e.g. MS A to MS B to MS C, etc.

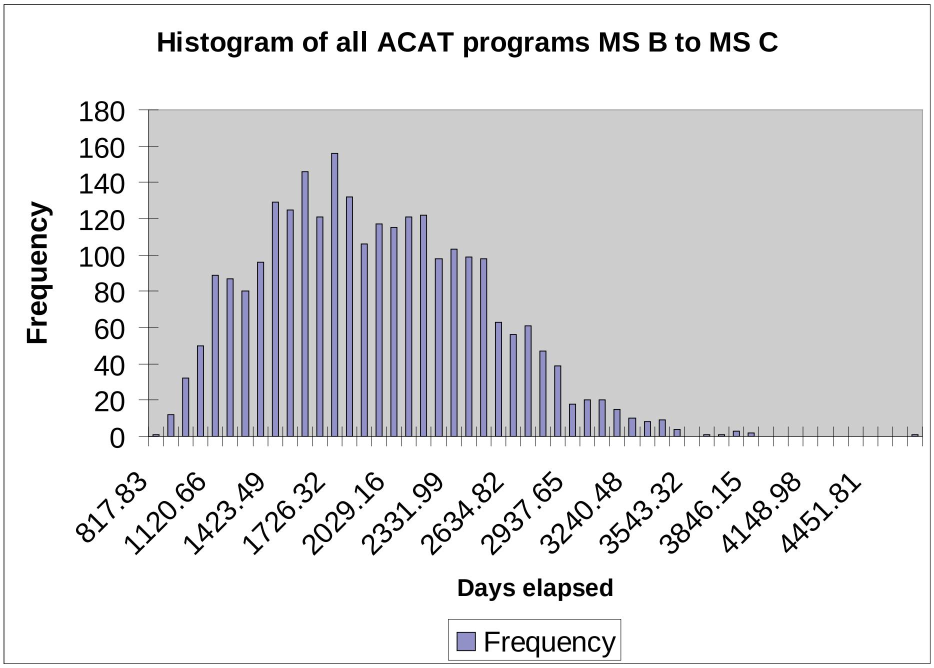


Figure 32: Histogram of time elapsed for all ACAT programs between MS B and MS C

The following figure shows the same data for the actual data discussed earlier in this chapter.

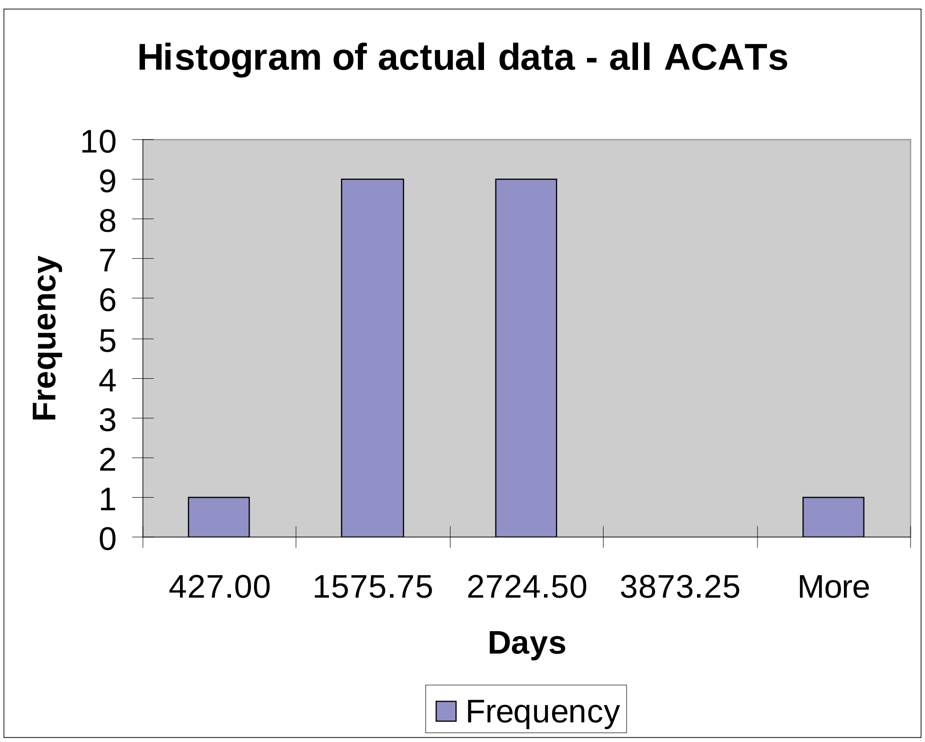


Figure 33: Histogram of actual program data time elapsed between MS B and MS C

The null hypothesis H0 is that the mean difference between the samples is zero. Using the Data Analysis pack in Microsoft Excel, the following results were obtained.

t-Test: Two-Sample Assuming Unequal Variances

	Simulated Data	*Actual Data*
Mean (days)	1888.41	1620.45
Variance	299682.97	991072.37
Observations	2613.00	20.00
Hypothesized Mean Difference	0.00	
df	19.00	
t Stat	1.20	
P(T<=t) one-tail	0.12	
t Critical one-tail	1.73	
P(T<=t) two-tail	0.24	
t Critical two-tail	2.09	

Table 13: t-Test: Two-Sample test assuming unequal variances between data for all ACATs

Since the null hypothesis is that the mean difference is zero, this is a two-sided test. Since the t-statistic < t critical (1.20 < 2.09) and p value > alpha (0.24 > 0.05), the null hypothesis is not rejected at the 95% confidence level.

ACAT I model results vs ACAT I actual results

Next, the ACAT I data will be tested. The following diagrams are for both sets of ACAT I data (model and actual).

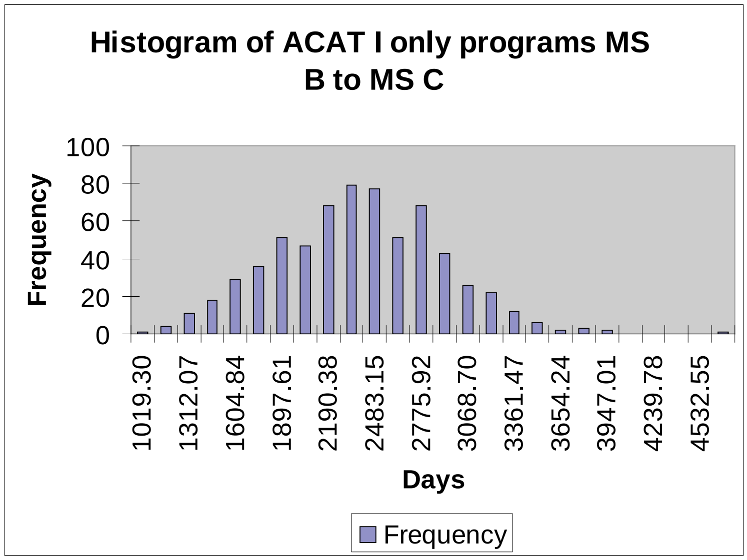


Figure 34: Histogram of time elapsed for ACAT I data between MS B and MS C

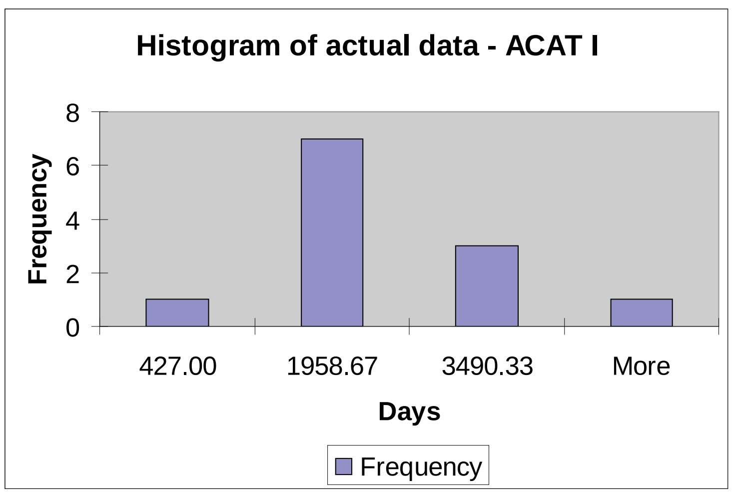


Figure 35: Histogram of time elapsed for ACAT I data between MS B and MS C

The associated unequal variances t-test reveals the following:

t-Test: Two-Sample Assuming Unequal Variances

	Simulated Data	*Actual Data*
Mean (days)	2310.44	1800.67
Variance	275594.31	1435249.52
Observations	657.00	12.00
Hypothesized Mean Difference	0.00	
df	11.00	
t Stat	1.47	
P(T<=t) one-tail	0.08	
t Critical one-tail	1.80	
P(T<=t) two-tail	0.17	
t Critical two-tail	2.20	

Table 14: ACAT I model and actual data test results

Since the null hypothesis is that the mean difference is zero, this is a two-sided test. Since the t-statistic < t critical (1.47 < 2.20) and p value > alpha (0.17 > 0.05), the null hypothesis is not rejected at the 95% confidence level.

ACAT II model results vs ACAT II actual results

Next, the ACAT II data will be tested. The following diagrams are for both sets of ACAT II data (model and actual).

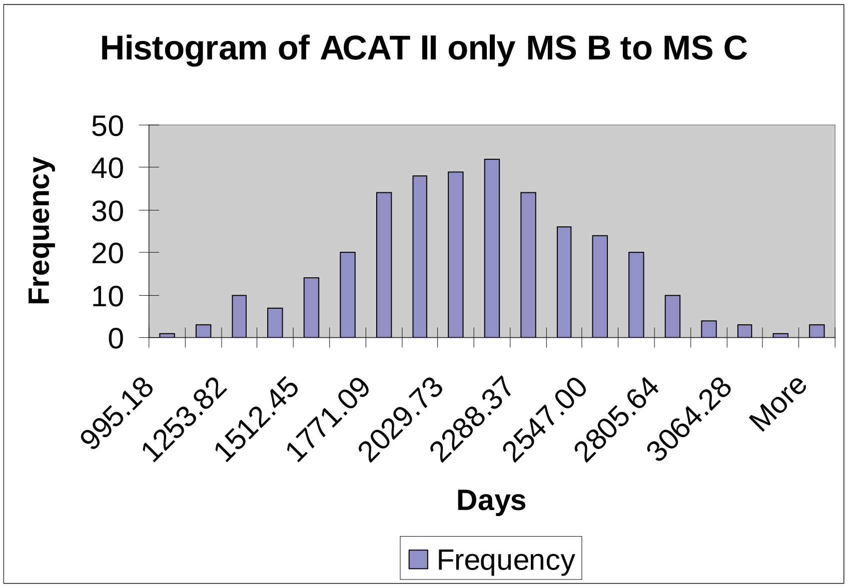


Figure 36: ACAT II model data between MS B and MS C

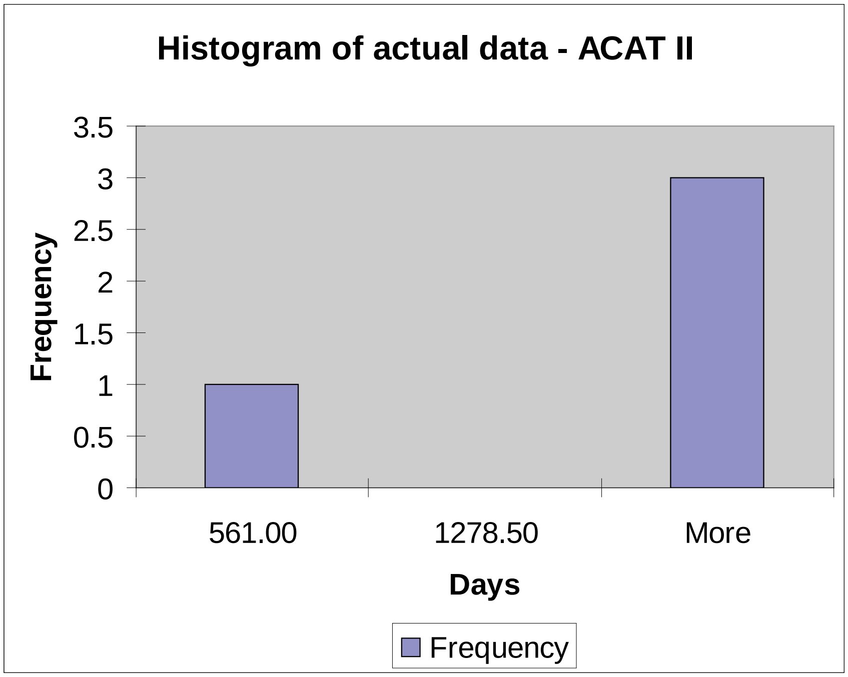


Figure 37: ACAT II actual time elapsed data between MS B and MS C

The associated unequal variances t-test reveals the following:

t-Test: Two-Sample Assuming Unequal Variances

	Simulated Data	*Actual Data*
Mean (days)	2038.78	1476.50
Variance	185708.13	422276.33
Observations	333.00	4.00
Hypothesized Mean Difference	0.00	
df	3.00	
t Stat	1.73	
P(T<=t) one-tail	0.09	
t Critical one-tail	2.35	
P(T<=t) two-tail	0.18	
t Critical two-tail	3.18	

Table 15: ACAT II model and actual t-test results

Since the null hypothesis is that the mean difference is zero, this is a two-sided test. Since the t-statistic < t critical (1.73 < 3.18) and p value > alpha (0.18 > 0.05), the null hypothesis is not rejected at the 95% confidence level.

ACAT III model results vs ACAT III actual data results

Next, the ACAT III data will be tested. The following diagrams are for both sets of ACAT I data (model and actual).

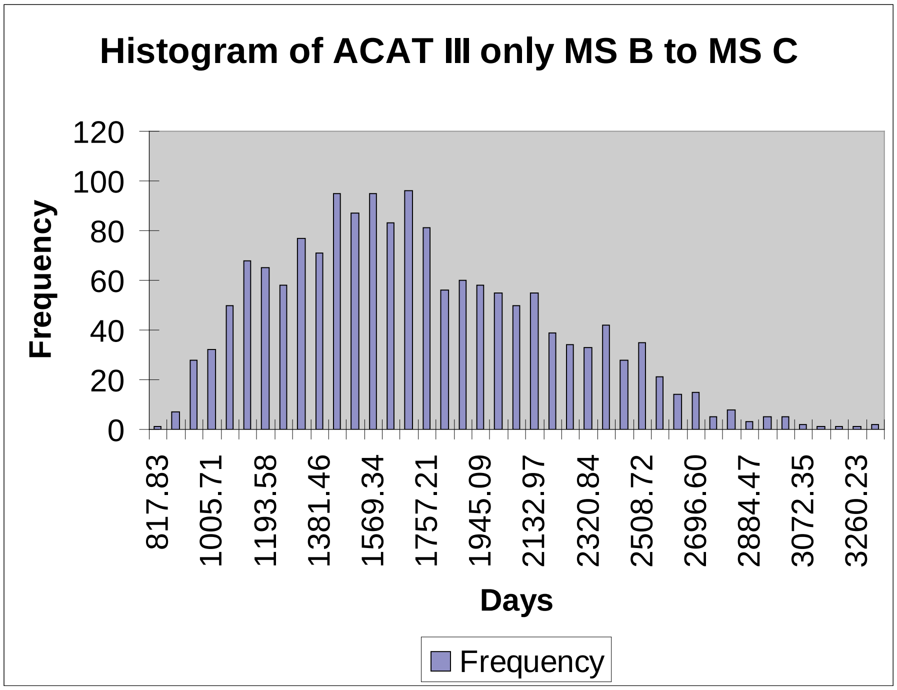


Figure 38: ACAT III model histogram of time elapsed between MS B and MS C

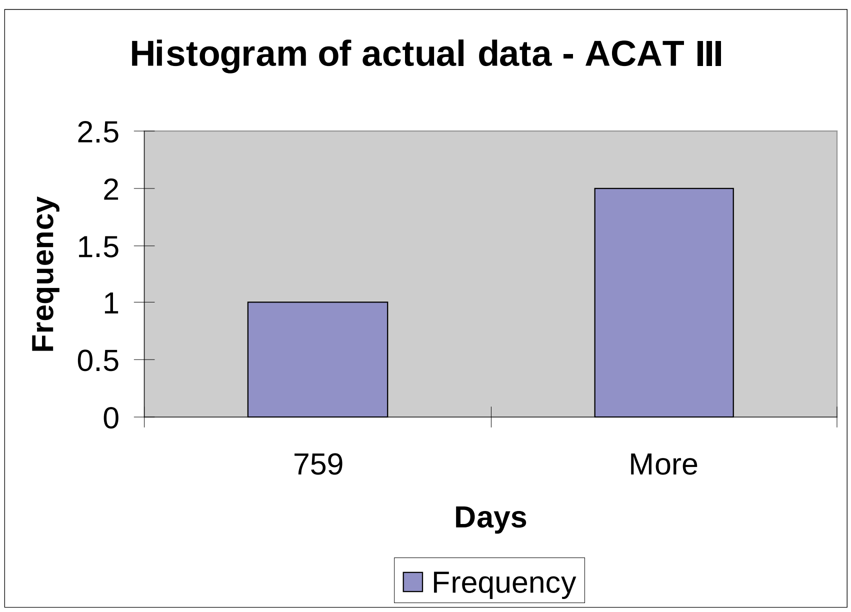


Figure 39: Histogram of ACAT III actual time elapsed between MS B and MS C

The associated unequal variances t-test reveals the following:

t-Test: Two-Sample Assuming Unequal Variances

	Simulated Data	*Actual Data*
Mean (days)	1686.72	1223.75
Variance	215631.26	224564.92
Observations	1623.00	4.00
Hypothesized Mean Difference	0.00	
df	3.00	
t Stat	1.95	
P(T<=t) one-tail	0.07	
t Critical one-tail	2.35	
P(T<=t) two-tail	0.15	
t Critical two-tail	3.18	

Table 16: t-test results for ACAT III data

Since the null hypothesis is that the mean difference is zero, this is a two-sided test. Since the t-statistic < t critical (1.95 < 3.18) and p value > alpha (0.15 > 0.05), the null hypothesis is not rejected at the 95% confidence level.

Across all breakdowns of data, there is a high degree of confidence that the mean difference between the data is zero. This analysis was also done excluding those programs that had not yet reached MS C as of March 2009. There was no difference in the outcomes of the statistical analysis. Therefore the two samples represent the same outcome of program data between MS B and MS C at a 95% confidence level.

Conclusions

Through the careful verification and validation of both the free-hand model and a subsequent computer programmed model, this chapter has demonstrated both models have internal validity. It comes from tying conceptual evidence across the two model forms to the empirical evidence established by statistical testing of the model output and actual system data.

A great deal of time and effort was made to not only sample system participants, but to also go to additional members of the system for feedback on the model and its construct. The care and

attention given to representing the individual model elements correctly facilitated easy understanding among those asked for feedback. This feedback improved the model tremendously and paved the way for a relatively smooth coding effort into the modeling environment chosen. It also helped with the overall debugging as well as the overall verification and validation of the model results using statistical means.

There is a high degree of confidence that the model not only behaves as intended but also does a good job in developing data consistent with actual acquisition program outcomes. While only a portion of this model could be tested empirically, the methodology used in constructing the model remained the same throughout and lends credibility where empirical testing falls short.

CHAPTER 7-- MODEL RESULTS AND REPRESENTATIVE OUTPUT

As mentioned earlier, the model is designed to mimic the performance of the large "enterprise" system of weapon system acquisition in the US Air Force. It begins at the point where new ideas are being explored and are entering the system at a rapid pace. The system filters out a great deal of them and only those with a chance of viability enter the formalized system. Even then, a majority of these ideas are shuttled off toward an existing activity (another weapon system in the sustainment phase) where the idea can be added as a modification to an existing platform or platforms. A relatively small number of programs actually enter the formalized system and complete it through milestone C. The model is robust in that it easily accommodates the majority of the paths and processes that exist in the overall system. Some of the robustness comes from many of the underlying assumptions that exist in the model and the way individual process tasks and decision points are represented.

Model Parameters

The model is coded within the Arena simulation software environment but does not automatically contain all of the information needed to begin. The main settings needed are to indicate how many iterations of the model the software should complete, the time step of interest (days) and how many hours are available per day for use (24). The user has the option to determine what kinds of statistics should be collected beyond the typical assortment of data the model captures. Finally, the user can determine the speed of the animations (if they have been turned on) as well as the frame refresh rate to display the animation. The software automatically reinitializes every variable at the beginning of each iteration and keeps track of the multiple activities going on in parallel at any given point throughout each simulation iteration.

A few assumptions exist within the model. They are repeated here for convenience. The unit of analysis is a program or idea. The ACAT level is randomly selected as well as the different paths a

particular idea may follow as per the expert data collected in the previous interviews. An acquisition program is the unit of analysis; the term project or program is used interchangeably; different ACAT levels are generated randomly according to expert assisted determination of frequency; interactions and interdependencies among projects are captured in the existing process time distributions; and that there are no 'memory effects' between the processes and subsequent iterations of the model. The memory effects assumption addresses the probability of interdependencies in the system (but not necessarily between projects). If each program were modeled with "memory" – or if actions taken earlier in the lifecycle change the attributes of the program in a way that substantially affects the way it is treated by subsequent processes – then there would be significantly different model outcomes possible. There would probably be many information feed-forward loops going on to "prepare" the down stream processes for the coming program along with associated feedback loops for the same reason. Arguments for or against such a modeling construct could be easily debated here. However, not including this information seemed reasonable as it takes years to go through the process and any 'corporate' or 'collective' memory about a program will likely be forgotten over time due to, among other things, the turnover in personnel, the inevitable changes in cost, schedule and requirements., etc. If there is any associated memory effect, the results of this effect would likely change the time distributions/variance of different processes as well as change probabilities at different decision points.

Model Simulation

Having the ability to simulate this model allows a great deal of analysis to take place. Powerful analysis techniques such as Monte Carlo simulation and data fitting using statistical techniques allows the researcher to cover a large number of hypothetical situations in a very short period of time.

10,000 iterations were chosen as a good number to test the behavior and operation of the model while allowing all possible path combinations to be explored. Running a simulation of the model with 10,000 iterations requires approximately one hour. This varies upon the other demands on a

computer's CPU cycles, etc. The time required above is with the built-in animation turned off. The intent is to assess if that number is sufficient to characterize system behavior within acceptable variation. A discussion of the number of iterations necessary to characterize the system will occur later.

In order to understand the behavior of the model, many places of the model are "instrumented" to provide data for further analysis. Arena is well-suited for analysis of this kind and enables relatively easy access to points within the model for data collection. Most of the data is collected automatically by Arena but also allows for user-defined information to be collected. The robustness of this simulation platform is appealing because it is so easily customized. Some real world information exists about the different process yields. There are multiple exit points to the system and not all of them are analyzed except for understanding the frequency of items that met these termination points. The following graphs and tables represent typical model outputs. A brief explanation or summary of each output will follow.

Typical model output

The typical model output consists of a raw text file with the information requested. A separate file for each query is generated. For instance, one of the more important points being evaluated is the outcomes at Milestone C. The data file at this point of the model records the value of the variable (time) at Milestone C or if the simulation finishes along another path (e.g. the program is killed), the value of the Milestone C variable remains zero. The following figure is representative of this output.

Data item:	Record 15		
Run date:		5/21/2009	
Options:	YDT		10000
Time	Observation		
-1		0	
3684.781683		3684.781683	
-2		0	
-3		0	
-4		0	
-5		0	
-6		0	
-7		0	
-8		0	
-9		0	
-10		0	
1464.751075		1464.751075	
-11		0	
6218.263807		6218.263807	
-12		0	
-13		0	

Figure 40: Representative and partial output of simulation file

The above figure represents only a fraction of the actual data collected in this output file – it is merely representative of the available data. It has 10,000 entries since that was the number of trials. To make the analysis easier to understand, the same data was put into a histogram as the following graphic shows.

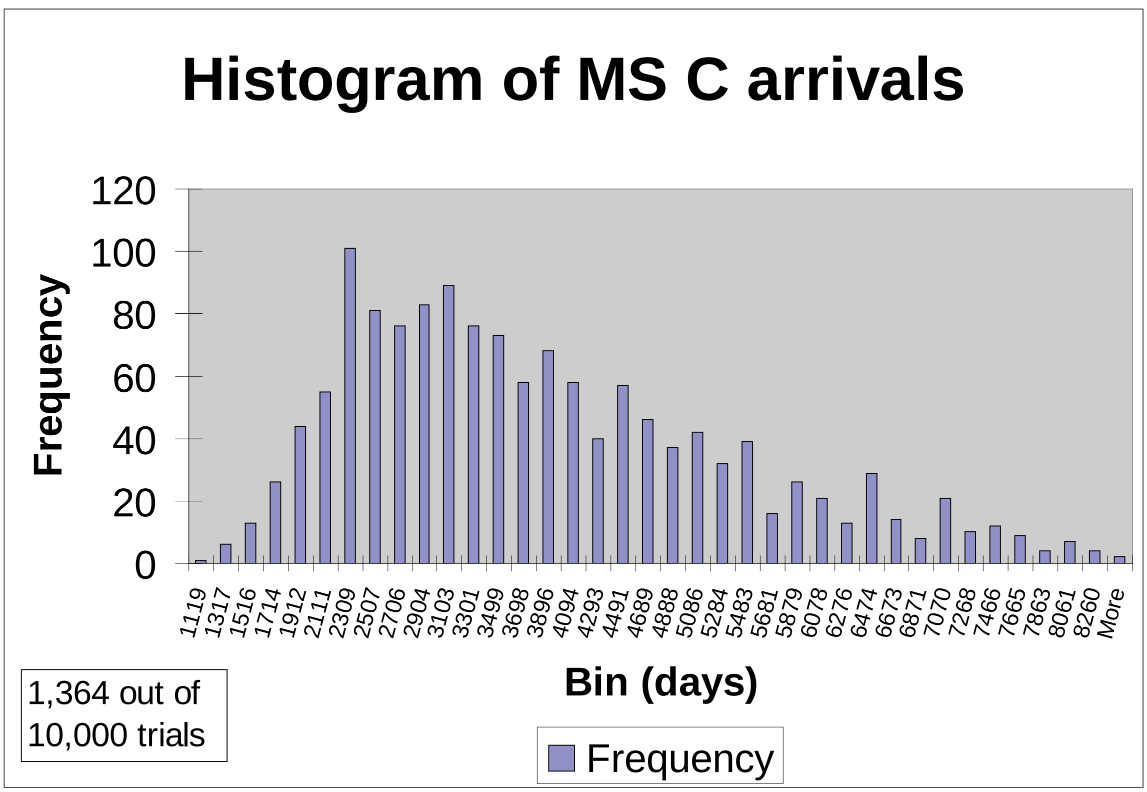


Figure 41: Histogram of model output at Milestone C

This information indicates that the overall system output has a range between around 1100 days (~ three years) to well over 8000 days (~ twenty-two years), with the majority of programs ending between 2300 days (~ six years) and 3200 days (~ eight years). At first glance, as well as comparing the two samples in the pervious chapter, a high degree of confidence exists that these outcomes are comparable to real data. After iterating 100,000 times, the following figure shows the same kind of outcomes as the previous figure.

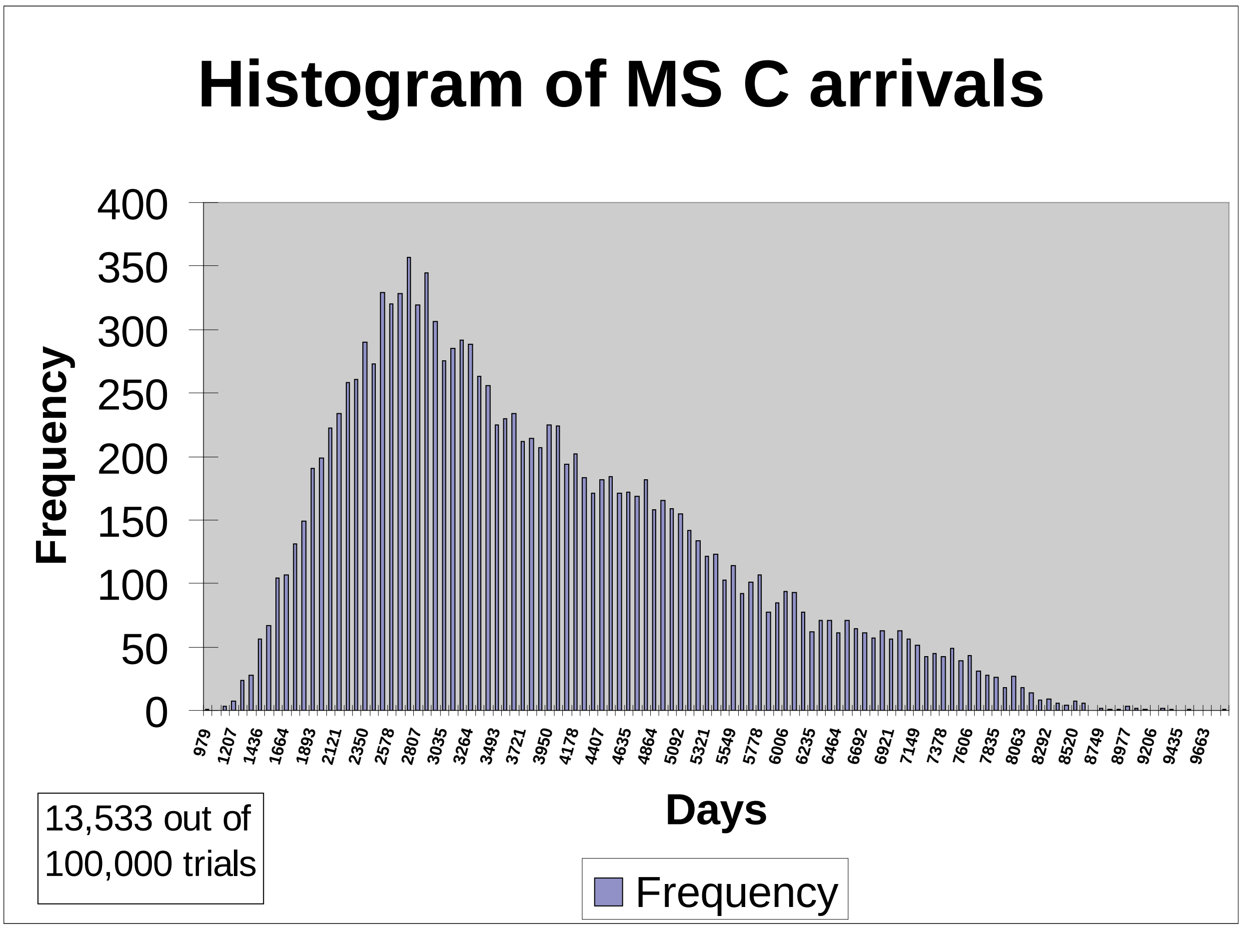


Figure 42: Histogram of MS C arrivals after 100000 iterations

Given the outcomes of the previous figure, one would expect the number of trials to be around an order of magnitude larger than the figure representing 10000 trials. Since the model is stochastic, it is expected that the number of successful outcomes would not be exactly 10 times the outcome shown of the 10,000 iteration graphic, and, it is not.

This outcome also serves as a sanity check on how many runs are required to achieve a stable result. Simulations with 10000, 48500 and 100000 iterations were conducted to determine the model's sensitivity to the different path dynamics. Since the model has twenty-nine different ending points, there are potentially many thousands of paths through the system. Given that 48500 iterations required over three hours to complete and that 100000 iterations required approximately ten hours, it was important to establish confidence in using sample sizes from the simulation model of only 10000 iterations.

The following table shows additional statistics about the outcomes at Milestone C with 10000 iterations. These statistics were calculated using Microsoft Excel's Data Analysis add-in and choosing the option for descriptive statistics.

Simulated Data (days)	
Mean	3755.34
Median	3435.38
Standard Deviation	1512.87
Range	7338.88
Minimum	1119.06
Maximum	8457.94
Program Count	1397.00

Table 17: Basis statistics for Milestone C model output

Among the items that are interesting to note is that the standard deviation at arriving at Milestone C is over four years and the range between possible outcomes is about twenty years. These ranges can partially be explained by the multiple paths through the system available for a program, especially those paths that allow for "direct entry" in the pre-C phase and also for large programs that are contentious in nature and are being constantly revisited. However, the average of ten years is about right for most programs. Were this data broken out by ACAT level, the standard deviations and ranges of these outcomes would decrease, especially per the previous chapter's analysis. The following table shows the basic statistics for 100000 iterations.

Simulated Data (days)	
Mean	3809.63
Median	3482.97
Standard Deviation	1545.92
Range	8836.79
Minimum	978.61
Maximum	9815.40
Program Count	13533.00

Table 18: Basic statistics for MS C model output with additional iterations

This table merely shows that while the median and standard deviation for the many runs stayed nearly the same compared with the earlier table and smaller sample size, the range increased as the model explored additional paths with lower probability of ever being taken. These runs therefore increased the mean as well as the maximum and minimum program outcomes.

Other analyses done; preliminary results

Close examination of the simulation results suggested additional analyses and tests should be done to understand the capabilities of the model. Additionally, it was important to understand the sensitivities of the model before different research hypotheses could be tested. The additional tests are looking for what ranges the model continues to be stable and under what conditions it is unable to reach an endpoint in the operation of the model. Once this envelope is known or understood, there can be better confidence in the research and analysis of the hypothesized tests to be completed.

Program End Points

One of the surprising outcomes was the sheer number of programs that don't make it "past the word 'go'." Although a cursory analysis of the probabilities leading up to these decision points suggested it would be a very large number, the simulated outcome was the first opportunity to closely examine the data from the perspective of where along the way are programs killed and at what frequency. The model has twenty-nine different exit points, of which reaching Milestone C is just one of

them. Further information on the exact meaning of the end point names can be found in Appendices D and E.

Number of samples	9998	
Name of Ending Point		
Early end; in scope of existing document; outright rejection	3444	34.447%
new concepts after waiting period; rejected	2754	27.546%
remain in acq	1891	18.914%
arrive at MS C	1397	13.973%
independent document PreC	82	0.820%
2nd time requirements path	57	0.570%
independent document preA	67	0.670%
independent document PreB	50	0.500%
joint interest preC	34	0.340%
1st time requirements path	33	0.330%
1st time requirements path preC	36	0.360%
joint interest PreB	18	0.180%
joint integration PreC	14	0.140%
joint interest preA	17	0.170%
2nd time requirements preB	19	0.190%
1st time requirements PreB	12	0.120%
2nd time requirements path preC	16	0.160%
kill at MS C	18	0.180%
joint integration preB	11	0.110%
Joint Integration PreA	18	0.180%
end at COA	7	0.070%
no AoA	3	0.030%
kill at CDR	0	0.000%
stop MS B	0	0.000%
pre-MS C begin	0	0.000%
kill at MS B	0	0.000%
kill at PDR	0	0.000%
concept selection	0	0.000%
2nd try ms A	0	0.000%
Totals	**9998**	**100%**

Table 19: Analysis of model terminating points

At first blush, we see that the vast majority of programs never make it into the formal system. Between being rejected outright or rejected after a small "socialization" period, the first column of data shows 62% of programs end in this manner. However, it still doesn't shed much insight into overall model behavior and process outcomes.

Number of samples	3800	
Name of Ending Point		
Early end; in scope of existing document; outright rejection	excluded	excluded
new concepts after waiting period; rejected	excluded	excluded
remain in acq	1891	49.76%
arrive at MS C	1397	36.76%
independent document PreC	82	2.16%
2nd time requirements path	57	1.50%
independent document preA	67	1.76%
independent document PreB	50	1.32%
joint interest preC	34	0.89%
1st time requirements path	33	0.87%
1st time requirements path preC	36	0.95%
joint interest PreB	18	0.47%
joint integration PreC	14	0.37%
joint interest preA	17	0.45%
2nd time requirements preB	19	0.50%
1st time requirements PreB	12	0.32%
2nd time requirements path preC	16	0.42%
kill at MS C	18	0.47%
joint integration preB	11	0.29%
Joint Integration PreA	18	0.47%
end at COA	7	0.18%
no AoA	3	0.08%
kill at CDR	0	0.00%
stop MS B	0	0.00%
pre-MS C begin	0	0.00%
kill at MS B	0	0.00%
kill at PDR	0	0.00%
concept selection	0	0.00%
2nd try ms A	0	0.00%
Totals	**3800**	**100.00%**

Table 20: Analysis of model terminating points excluding early rejections

If these data points are excluded from the data sample, though, we learn that half of all programs get diverted into existing acquisition programs where they will be accomplished as part of another system's sustainment process, as shown in the middle column.

Number of samples	1909	
Name of Ending Point		
Early end; in scope of existing document; outright rejection	excluded	excluded
new concepts after waiting period; rejected	excluded	excluded
remain in acq	excluded	excluded
arrive at MS C	1397	73.18%
independent document PreC	82	4.30%
2nd time requirements path	57	2.99%
independent document preA	67	3.51%
independent document PreB	50	2.62%
joint interest preC	34	1.78%
1st time requirements path	33	1.73%
1st time requirements path preC	36	1.89%
joint interest PreB	18	0.94%
joint integration PreC	14	0.73%
joint interest preA	17	0.89%
2nd time requirements preB	19	1.00%
1st time requirements PreB	12	0.63%
2nd time requirements path preC	16	0.84%
kill at MS C	18	0.94%
joint integration preB	11	0.58%
Joint Integration PreA	18	0.94%
end at COA	7	0.37%
no AoA	3	0.16%
kill at CDR	0	0.00%
stop MS B	0	0.00%
pre-MS C begin	0	0.00%
kill at MS B	0	0.00%
kill at PDR	0	0.00%
concept selection	0	0.00%
2nd try ms A	0	0.00%
Totals	**1909**	**100.00%**

Table 21: Analysis of model terminating points excluding early rejected & diverted programs

If the diverted data is also excluded, greater insights emerge about the behavior of the overall formal system. For instance, we see that nearly ¾ of all programs that formally enter the Acquisition system comprised of JCIDS, PPBE, and acquisition, arrive at milestone C. Therefore, the model suggests that while the initial entry barrier is high, once into the system, the likelihood of eventually reaching Milestone C is very high.

A similar examination of the proportional outcomes with sample sizes of 48500 and 100000 was also accomplished. Both have outcomes that are similar to the outcomes of the sample size of 10000. See the two figures below for more details.

Number of samples	48500		18407		9024	
Name of Ending Point						
Early end; in scope of existing document; outright rejection	16982	35.014%	excluded	excluded	excluded	excluded
new concepts after waiting period; rejected	13111	27.033%	excluded	excluded	excluded	excluded
remain in acq	9383	19.346%	9383	50.98%	excluded	excluded
arrive at MS C	6593	13.594%	6593	35.82%	6593	73.06%
independent document PreC	439	0.905%	439	2.38%	439	4.86%
2nd time requirements path	255	0.526%	255	1.39%	255	2.83%
independent document preA	257	0.530%	257	1.40%	257	2.85%
independent document PreB	239	0.493%	239	1.30%	239	2.65%
joint interest preC	159	0.328%	159	0.86%	159	1.76%
1st time requirements path	173	0.357%	173	0.94%	173	1.92%
1st time requirements path preC	148	0.305%	148	0.80%	148	1.64%
joint interest PreB	78	0.161%	78	0.42%	78	0.86%
joint integration PreC	94	0.194%	94	0.51%	94	1.04%
joint interest preA	94	0.194%	94	0.51%	94	1.04%
2nd time requirements preB	84	0.173%	84	0.46%	84	0.93%
1st time requirements PreB	77	0.159%	77	0.42%	77	0.85%
2nd time requirements path preC	74	0.153%	74	0.40%	74	0.82%
kill at MS C	81	0.167%	81	0.44%	81	0.90%
joint integration preB	71	0.146%	71	0.39%	71	0.79%
Joint Integration PreA	53	0.109%	53	0.29%	53	0.59%
end at COA	28	0.058%	28	0.15%	28	0.31%
no AoA	15	0.031%	15	0.08%	15	0.17%
kill at CDR	3	0.006%	3	0.02%	3	0.03%
stop MS B	2	0.004%	2	0.01%	2	0.02%
pre-MS C begin	4	0.008%	4	0.02%	4	0.04%
kill at MS B	0	0.000%	0	0.00%	0	0.00%
kill at PDR	3	0.006%	3	0.02%	3	0.03%
concept selection	0	0.000%	0	0.00%	0	0.00%
2nd try ms A	0	0.000%	0	0.00%	0	0.00%
Totals	**48500**	**100%**	**18407**	**100.00%**	**9024**	**100.00%**

Table 22: End point summary statistics for sample of 48500

Number of samples	100000		37968		18482	
Name of Ending Point						
Early end; in scope of existing document; outright rejection	34830	34.830%	excluded	excluded	excluded	excluded
new concepts after waiting period; rejected	27202	27.202%	excluded	excluded	excluded	excluded
remain in acq	19486	19.486%	19486	51.32%	excluded	excluded
arrive at MS C	13533	13.533%	13533	35.64%	13533	73.22%
independent document PreC	904	0.904%	904	2.38%	904	4.89%
2nd time requirements path	501	0.501%	501	1.32%	501	2.71%
independent document preA	493	0.493%	493	1.30%	493	2.67%
independent document PreB	510	0.510%	510	1.34%	510	2.76%
joint interest preC	365	0.365%	365	0.96%	365	1.97%
1st time requirements path	353	0.353%	353	0.93%	353	1.91%
1st time requirements path preC	315	0.315%	315	0.83%	315	1.70%
joint interest PreB	188	0.188%	188	0.50%	188	1.02%
joint integration PreC	200	0.200%	200	0.53%	200	1.08%
joint interest preA	192	0.192%	192	0.51%	192	1.04%
2nd time requirements preB	164	0.164%	164	0.43%	164	0.89%
1st time requirements PreB	151	0.151%	151	0.40%	151	0.82%
2nd time requirements path preC	133	0.133%	133	0.35%	133	0.72%
kill at MS C	138	0.138%	138	0.36%	138	0.75%
joint integration preB	119	0.119%	119	0.31%	119	0.64%
Joint Integration PreA	117	0.117%	117	0.31%	117	0.63%
end at COA	62	0.062%	62	0.16%	62	0.34%
no AoA	24	0.024%	24	0.06%	24	0.13%
kill at CDR	3	0.003%	3	0.01%	3	0.02%
stop MS B	2	0.002%	2	0.01%	2	0.01%
pre-MS C begin	7	0.007%	7	0.02%	7	0.04%
kill at MS B	0	0.000%	0	0.00%	0	0.00%
kill at PDR	8	0.008%	8	0.02%	8	0.04%
concept selection	0	0.000%	0	0.00%	0	0.00%
2nd try ms A	0	0.000%	0	0.00%	0	0.00%
Totals	**100000**	**100%**	**37968**	**100.00%**	**18482**	**100.00%**

Table 23: End point summary statistics for sample of 100,000

A closer look at these tables reveals another example of how the larger sample sizes explores more process paths, and, hence, more termination points than the original sample size of 10,000. Based on the results examined, analysis based upon sample sizes of 48500 will be used for the balance of all analysis, sensitivity testing and hypothesis testing. The choice of this sample size balances the time required for processing and also the increased fidelity desired in the model.

DSM representation and preliminary analysis

There are other methods available to depict and analyze complex processes. One such method is the Design Structure Matrix. The appeal to use DSM as a method of representation and analysis is from the power resulting through the analysis available using this form of representation. It is particularly well-suited to complex systems that have several tasks that are stochastic and cyclical in nature. For instance, in the model developed for this research, many of the process tasks are identical except for the phase that the program is in (e.g. they are given a different name reflecting the milestone being approached). Nevertheless, the size and complexity of the current model makes DSM analysis difficult. Most research and academic tools available do not allow for the representation of more than a few hundred tasks. A MIT-distributed tool using an Excel add-in for spreadsheets limits complexity at no more than approximately two hundred fifty tasks [124]. This version is used to present the following analysis.

At the highest level, the following is an example of a DSM analysis on the top-level processes.

		Pre-MS A requirements	Pre-MS A PPBE	Pre-MS A acquisition	Pre-MS A contractor	Pre-MS B requirements	Pre-MS B PPBE	Pre-MS B acquisition	Pre-MS B contractor	Pre-MS C requirements	Pre-MS C PPBE	Pre-MS C acquisition	Pre-MS C contractor
		1	2	3	4	5	6	7	8	9	10	11	12
Pre-MS A requirements	1	1	1	1									
Pre-MS A PPBE	2		2	1									
Pre-MS A acquisition	3	1	1	3	1								
Pre-MS A contractor	4			1	4								
Pre-MS B requirements	5	1				5	1	1					
Pre-MS B PPBE	6		1				6	1					
Pre-MS B acquisition	7	1		1		1	1	7	1				
Pre-MS B contractor	8							1	8				
Pre-MS C requirements	9	1				1				9	1	1	
Pre-MS C PPBE	10						1				10	1	
Pre-MS C acquisition	11	1				1		1		1	1	11	1
Pre-MS C contractor	12											1	12

Figure 43: Partitioned DSM of Acquisition System

The partitioned system shows three major sets of clusters. These correspond with the different acquisition system phases and a smaller set of clusters between acquisition and contractors. It also shows upstream processes impacting downstream ones. This is what would be expected.

The three different processes of requirements, PPBE, and acquisition all interact one with another and then acquisition and the contractor interact with each other. This pattern repeats itself through the three phases of Acquisition under this analysis. Upstream requirements influence all of the downstream chunks. Each phase's PPBE influences the downstream PPBE process and the same is seen for the acquisition process. There is just not a lot of detail present in this DSM to draw many conclusions beyond those above. Therefore, a closer examination of the model is warranted to ensure that lower-level activities are not the source of behaviors of potential interest that don't show up or are masked in this higher-level analysis. DSMs will be used to model each of the three phases of the process.

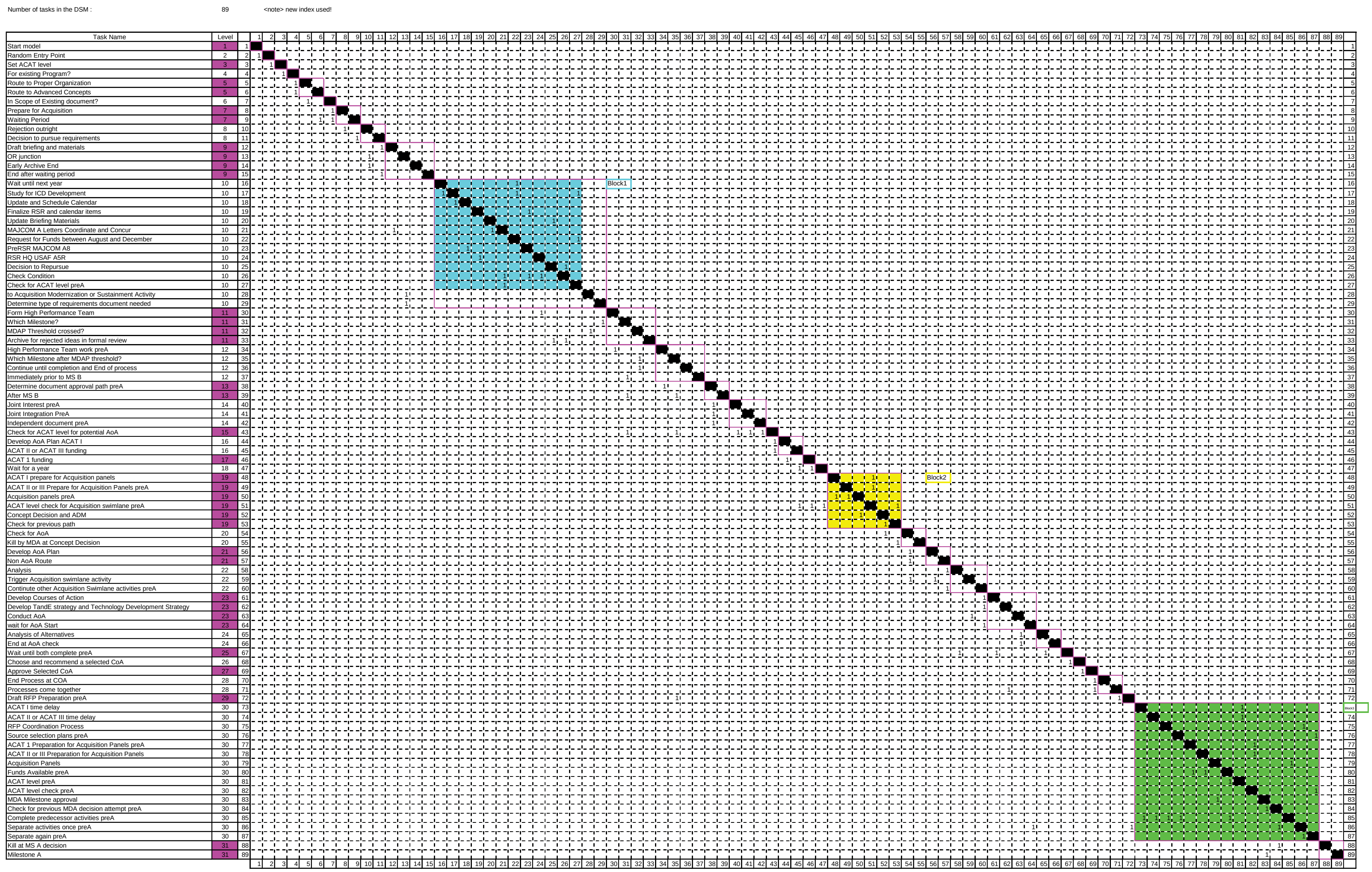


Figure 44: Pre-MS A Partitioned DSM

The DSM of the Pre-MS A phase of the entire acquisition process consists of an 89 × 89 matrix and does not show anything surprising. The DSM analysis tool has partitioned the tasks comprising the DSM into 31 chunks and 3 blocks. In fact, the ordering of the tasks as inputs to the partitioning tool were deliberately mixed up to see if the tool's heuristic would pull things together properly. It did.

The three blocks identified by the tool represent the approval process within the Requirements system, the 'concept decision' process in the acquisition swim lane, and the Milestone decision in the acquisition swim lane. The three joint requirement approval processes for ACAT I, II, or III programs were modeled as self-contained processes. If they had been broken out into their constituent pieces, they likely would have been 'blocked' as well since their feedback loops and activities are very similar to those represented by the blocked out areas. They had been previously collapsed because they were already self-contained.

Now, what does this really mean? There are a couple of main takeaways. First, approval processes with potential for disapproval and resubmission are going to grind up precious time in any process – perhaps this is where some process improvement focus ought to be placed. Second, in the Pre-MS A Phase, the requirements system has two such processes, e.g. the approval through the RSR, and any joint processes needed, and the acquisition system has two such processes, e.g. the Material Concept decision and the milestone decision. Both of them are going to react, especially the acquisition system, to any perturbations in or caused by the PPBE - which isn't modeled explicitly because the turbulence from this system is expressed in the time distributions, e.g. variance, of the various modeled processes. Similar conclusions are expected when analyzing the other two phases of acquisition covered by the model.

Number of tasks in the DSM : 104 <note> new index used!

Task Name	Level	
Program review condition	1	1
Uncertainty generator for Event Happens PreB	1	2
from Milestone A	1	3
Contract started PreB	2	4
Event Happens PreB	2	5
Split flow for PreMSB	2	6
RFP Release and Source Selection PreB	3	7
Delay for Protest review PreB	3	8
Protest award PreB	3	9
Protest upheld	3	10
Dispose of program review prior to need	3	11
Dispose of event happens prior to need	3	12
Program Review OK	3	13
Scope Growth Technical Problems PreB	3	14
Scope and Award Technology Development Contracts	4	15
Funds Redirected	4	16
Separate for logic testing PreB	4	17
Prepare Courses of Action PreB	5	18
End of Program Review Loop	5	19
Path depends upon ACAT level PreB	5	20
Logic check for ACAT level PreB	5	21
Determine path for process flow Scope Growth PreB	6	22
Begin Testing PreB	6	23
Begin Testing ACAT II or III PreB	6	24
Split flow PreB	6	25
Contract Startup PreB	7	26
Seek funds PreB	7	27
Funding problem Contract Change Required preB	7	28
Query contract elapsed time 6 months to completion PreB	7	29
PEM or other staff find money PreB	8	30
End of contract change path	8	31
contractor loop PreB	8	32
Wait for Signal from Acquisition	8	33
Wait for T and E Start	8	34
KPP Development	9	35
Developmental Test and Evaluation	9	36
Obtain funds in a timely manner PreB	9	37
Contract complete PreB	9	38
Wait for signal for Costing and Acquisition Planning activities PreB	9	39
Wait for more favorable conditions	10	40
Decision to pursue requirements PreB	10	41
Check on conditions	10	42
Change Contract or Rescope contract PreB	10	43
End of Event Happens Loop PreB	10	44
Trades Needed	10	45
Split into Acq Planning and Costing Activities	10	46
first time to contract completion	10	47
Draft briefing and materials PreB	11	48
Acquisition Planning Activities PreB	11	49
Dev testing rework and delay	11	50
End of Program Management and Oversight loop	11	51
Completion of contract PreB	11	52
Split into costing activities PreB	11	53
Update and Schedule Calendar PreB	12	54
Finalize RSR and calendar items PreB	12	55
Update Briefing Materials PreB	12	56
MAJCOM A Letters Coordinate and Concur PreB	12	57
PreRSR MAJCOM A8 PreB	12	58
RSR HQ USAF A5R PreB	12	59
Decision to Repursue PreB	12	60
Check Condition PreB	12	61
Early Operational Assessment	12	62
Program Office Cost Estimate PreB	12	63
Second split into costing activities PreB	12	64
Contractor cost estimate PreB	13	65
Independent Cost Estimate PreB	13	66
End prior to start of Requirements swimlane PreB	13	67
Additional Adjustments	13	68
Wait for EOA completion	13	69
Form High Performance Team PreB	14	70
EOA rework and delay preB	14	71
for Affordability Assessment PreB	14	72
High Performance Team work preB	15	73
Affordability Assessment PreB	15	74
System Requirements Review	15	75
SRR rework and delay	16	76
Determine document approval path preB	16	77
for funding check	16	78
Joint Interest preB	17	79
Joint Integration PreB	17	80
Independent document preB	17	81
Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB	17	82
Processes come together PreB	17	83
Draft RFP Preparation preB	18	84
ACAT level preB	18	85
ACAT I time delay PreB	19	86
ACAT II or ACAT III time delay PreB	19	87
Separate activities once preB	19	88
RFP Coordination Process PreB	20	89
Source selection plans preB	20	90
KPPs arrive from Requirements	20	91
Set Acquisition Program Baseline PreB	21	92
Bring three processes together PreB	21	93
Complete predecessor activities preB	22	94
ACAT level check preB	23	95
ACAT 1 Preparation for Acquisition Panels preB	24	96
ACAT II or III Preparation for Acquisition Panels preB	24	97
Acquisition Panels PreB	25	98
Receipt of approved CCD	26	99
Delay to repeat required steps PreB	27	100
MDA Milestone approval PreB	27	101
Check for previous MDA decision attempt preB	27	102
Kill at MS B decision	28	103
to Pre-MS C Swimlane	28	104

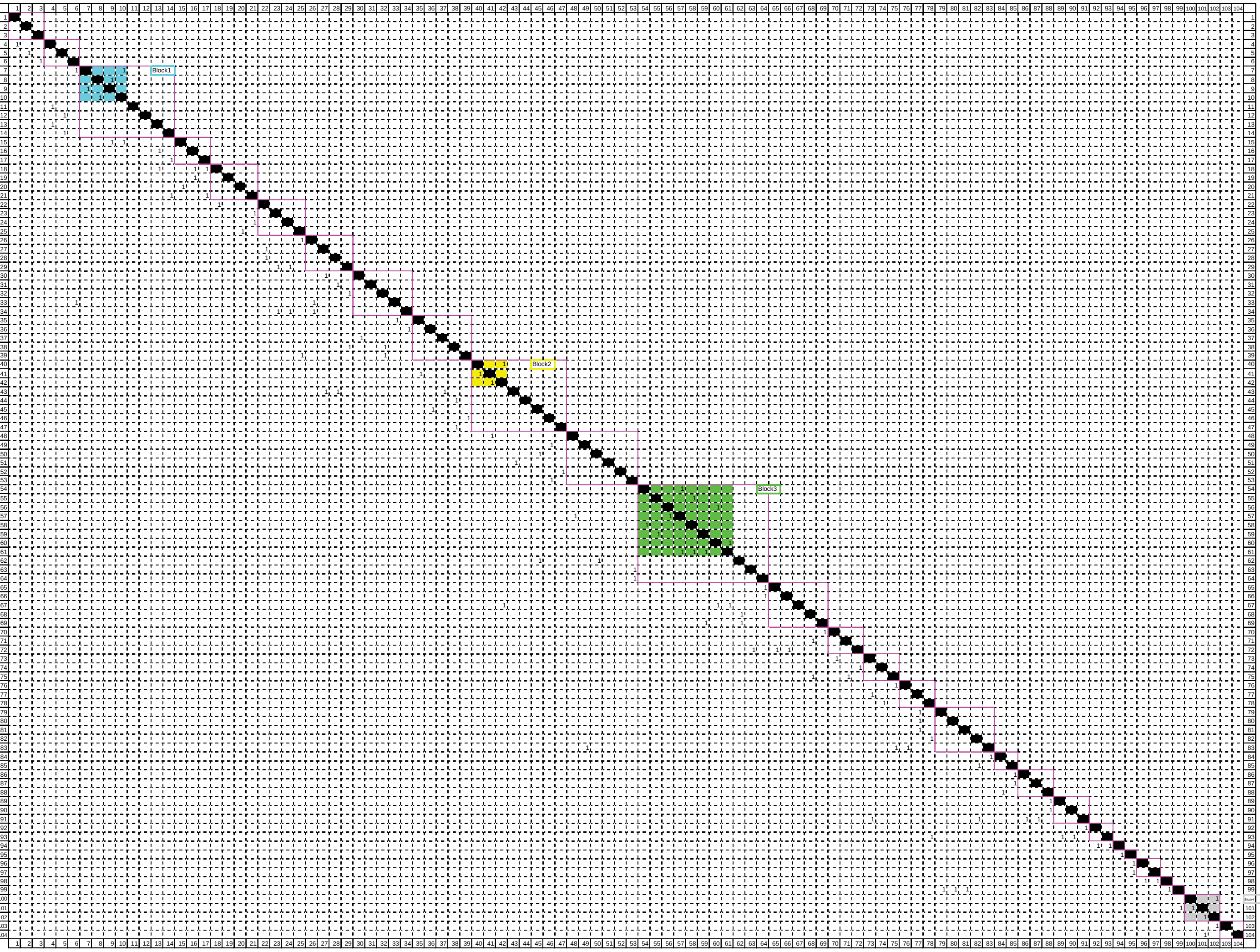


Figure 46: Pre-MS B Partitioned DSM

The Pre-B DSM depicted in the figure above is a 104 × 104 matrix. It doesn't show much off-diagonal activity. The partitioned DSM has clustered items into 28 chunks and has identified 4 major blocks of activity. These blocks correspond with approval activities in the Pre-Milestone B phase. These are: RFP Release and Source Selection with potential for contract protests; Requirements deciding whether to pursue the capability further; the Requirements approval processes at the MAJCOM level; and the Milestone B decision activities.

The four blocks are similar to those in the Pre-Milestone A Partitioned DSM in that they are review processes that represent the areas with the most potential for rework and revisiting of decisions. The different chunks are grouped in a manner that attempts to minimize the number of disparate inputs and outputs. The activities contained within these chunks are usually confined within a single process swim lane. The only real exceptions are those related to financial questions, where a query to the PPBE is required to find the answer.

The partitioned DSM for the Pre-Milestone C phase is similar to the previous two DSMs except that the number of activities in the Pre-Milestone C DSM is much greater than in the previous DSMs. This is not surprising as many more testing and review activities are taking place as the system inches toward approval for entering the last phase of acquisition: production. Looking at this DSM, not a lot of significant off-diagonal activities are seen.

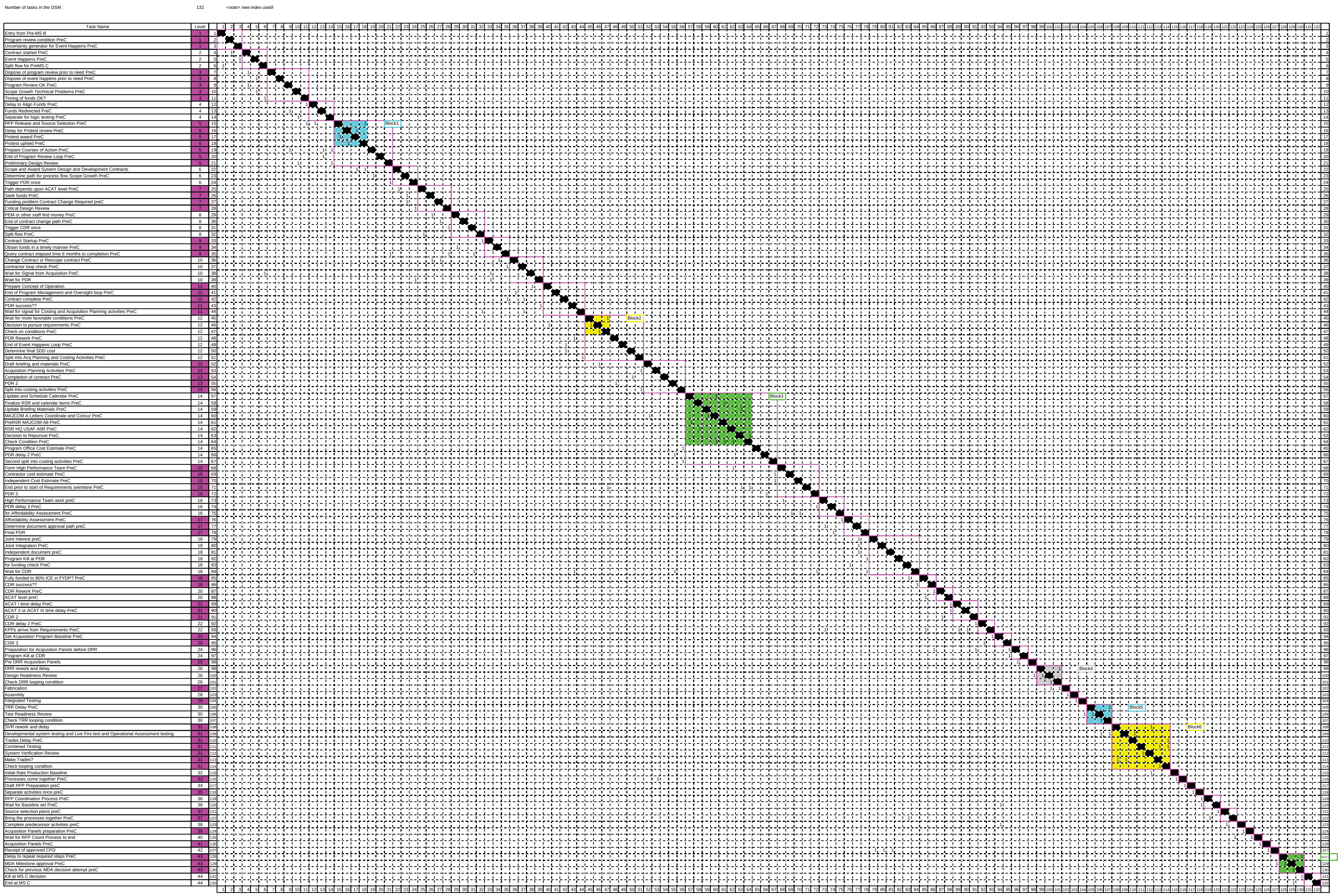


Figure 48: Pre-MS C Partitioned DSM

The partitioned DSM for the Pre-Milestone C activity is a 132 × 132 matrix, not including the processes associated with the joint requirements document approvals as in the other DSMs shown earlier. This partitioned DSM consists of 44 chunks and 7 major blocks. The blocks represent the following areas: the RFP and source selection process; requirements process determining if they will proceed in this phase; MAJCOM requirement document approval process; Design Readiness Review activities; Test Readiness Review activities; System Verification Review activities; and Milestone C approval activities. These blocks are where the system activities are most tightly coupled. Since these deal with approval processes, these results are not surprising. As noted previously, there aren't major loop-backs in the model and there isn't significant off-diagonal activity.

The combined DSMs represent a very linear process with interdependencies between three differing stovepipes. In practice, the system does not go backward and iterate—although some might argue that it should. It may be that these three communities at the macro level have evolved on fairly separate paths and the model is just reflecting that. As discussed earlier, there are interdependencies in the system, but each project is not modeled with "memory," e.g. actions taken earlier in the lifecycle change the attributes of the program in a way that substantially affects the way it is treated by subsequent processes. The model already accommodates the memory effect through the time distributions and probabilities that exist in all of the different model elements. Further work in this specific area is beyond scope of this effort.

Model Sensitivities

Returning to the discrete-event simulation model, it was deemed important to understand the sensitivities of the model. A process parameter was changed to see how the change would affect the model's behavior. The parameter in question was changed in three different places in the model, pre-milestone A, pre-milestone B, and pre-milestone C. For this experiment, a process called "Air Staff process" in the Requirements swim lane was modified in the Joint, Joint Integration, and Independent

document processes. One of these three steps must be met by all programs going through the Requirements swim lane—and the different processes named correspond to the ACAT level of the program.

The original model data will be compared to the changed model data. The output at MS C will be the data point used for the comparisons between the two models. The original data for the air staff process in the Independent and Joint Integration processes use a triangular input of 21, 25, and 42 days. The changed model uses triangular probability data of 21, 25, and 42 hours, e.g. a switch in the model was changed from “days” to “hours.” The original data for the Joint document process uses a slightly different triangular input of 21, 29, and 42 days. The changed model uses data of 21, 29, and 42 hours.

The outcome data shows that by changing this one process activity, “air staff process,” has a relatively small impact in terms of the final outcomes, even if this process is repeated three times, e.g. one time per model phase. The changed data is really not significant in terms of the final outcome. The tables below show that the average time through the system with the changed model only decreases slightly. A simple explanation for this outcome could be that although the air staff process, while on the critical path, e.g. all programs must go through it, of the Requirements process, is mitigated by other processes and their effects in other swim lanes.

Baseline data (days)	
Mean	3806.63
Standard Error	19.04
Median	3472.15
Standard Deviation	1546.24
Range	8696.34
Minimum	1119.06
Maximum	9815.40
Program Count	6593.00

Table 24: Original Model data outcomes at MS C

Air Staff Intervention data (days)	
Mean	3780.65
Standard Error	18.58
Median	3460.95
Standard Deviation	1515.31
Range	8296.83
Minimum	1135.29
Maximum	9432.11
Program Count	6653.00

Table 25: Changed model outcomes at MS C

Additional Questions using Sensitivity Test Data

Is the total impact of the changes examined above masked by all of the different potential paths through the model to make it to MS C? Would the change to the model be more significant if only programs that went through the entire "formal" process were examined? The following data examines exactly that scenario and reveals the following:

original model - no excursions allowed (days)	
Mean	5129.02
Standard Error	24.29
Median	4913.12
Standard Deviation	1241.88
Range	7007.52
Minimum	2807.89
Maximum	9815.40
Program Count	2613.00

Table 26: Original model outcomes at MS C with no excursions allowed

air staff intervention - no excursions allowed (days)	
Mean	5063.49
Standard Error	23.58
Median	4834.03
Standard Deviation	1213.97
Range	6856.13
Minimum	2575.99
Maximum	9432.11
Program Count	2650.00

Table 27: Air staff intervention model outcomes at MS C with no excursions allowed

Temporarily overlooking the fact that programs that only go through the formal process take longer to make it to MS C, the experimental results confirm the previous conclusions: changing the model parameters in the air staff process module did not change the model outcomes significantly, even when ensuring the programs met this process a total of three times or once each phase. On average, the air staff process required approximately 25 days to complete per time encountered, and in this experiment, the difference in the means between the original outcomes and the intervention outcomes is approximately 66 days, close to an average of 22 days duration for each time encountered. This is certainly reasonable given the original triangular distribution of the process data. These results increase confidence in the overall operation of the model.

Other Questions

Based on the above sensitivity testing, does the outcome data between results that were allowed to get to MS C by any path and those forced to traverse the entire formal system reveal anything significant? A visual comparison of histograms between the two data sets follows.

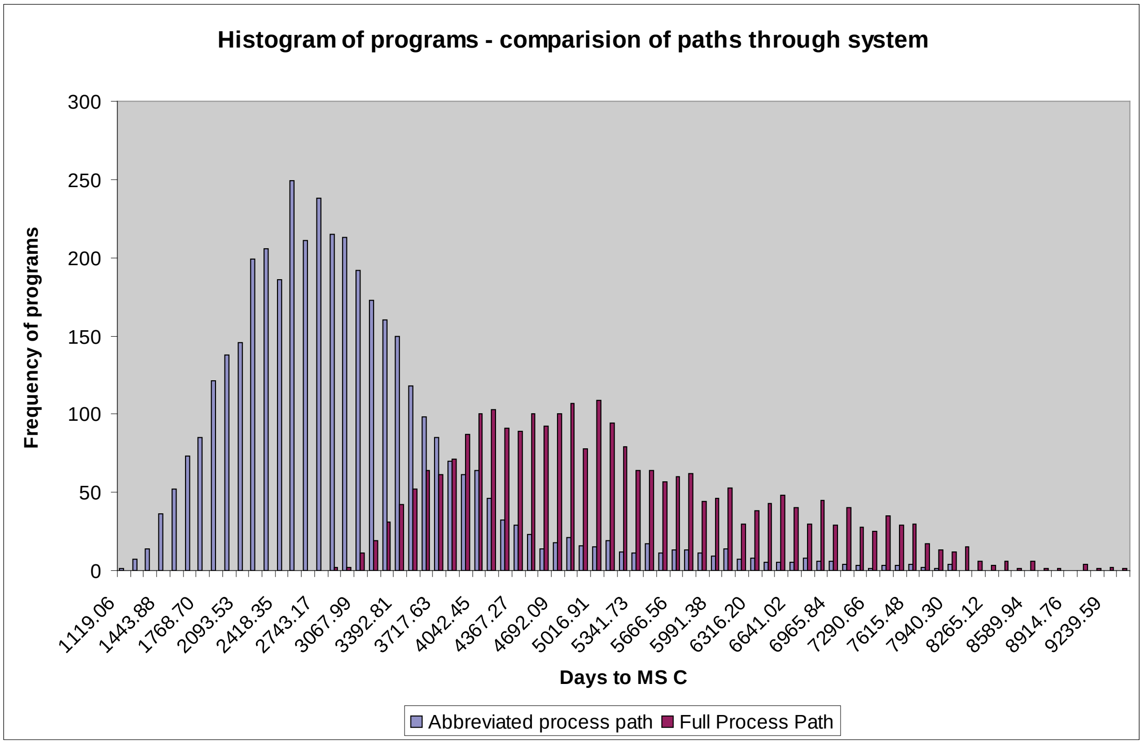


Figure 50: Comparison of MS C arrivals between forced formal system and any shortcuts

This graph does not show anything particularly new, but illustrates some of the reasons why any circumvention around the formal system is preferred. It almost always results in a program that reaches MS C before a formal system would. While the graph merely depicts how the model is programmed, it shows how programs prefer to go down these alternative paths. Both process paths also show the extended tail on the right, indicating some of the system effects of the reviews and potential pitfalls faced by a program during its development prior to MS C. As noted in earlier chapters, retaining flexibility in program execution is highly prized and graphically we see the range of possible results. The downside to the behavior of this system is that its stochastic nature and the wide range of potential outcomes make it difficult to forecast program completion times with a great deal of accuracy.

Further Model Results and Analysis

Additional examination of various data from the model results in a better understanding the operation of the model. This data lends insights into the actual overall operation of the enterprise

system. The following questions can be answered by looking at the data collected at various points throughout the model since the robustness of the modeling environment allows for ample and easy data collection.

Data analysis of 48500 sample size	**Count**	**Percentage overall**
"Programs" dismissed outright at the MAJCOM level	16982	35% of 48500 sample
Programs dismissed after a "socialization" period with the MAJCOM	13111	27% of 48500 sample
Programs that enter sustainment acquisition after going through an initial MAJCOM filter	10424	21.5% of 48500 sample
Programs that go through any portion of the formal system after initial MAJCOM filters	9024	18.6% of 48500 sample
Programs that are killed at various screens, decision points, and other places within the formal process	2431	5% of 48500 sample; 27% of 9024 in any part of formal system
Programs that actually enter the formal system via any process and make it to Milestone C	6593	13.6% of 48500 sample
Programs that circumvent any portion of the system and make it to Milestone C	3980	8.2% of 48550 sample; 60.4% of 6593 MS C success
Programs that originally enter sustainment that re-enter the formal system	1041	2.1% of 48500 sample; 10% of 10424 programs going to sustainment
Programs that originally enter sustainment that re-enter the formal system and make it to Milestone C	886	1.8% of 48500 sample; 13.4% of all 6593 MS C successes; 8.5% of 10424 in sustainment; 85.1% success in reaching MS C from sustainment entry
Programs via direct entry into the formal system that start process other than at the formal process beginning	3578	7.4% of 48500 sample

Programs via direct entry that arrive at MS C (do not go through sustainment first)	3094	6.4% of 48500 sample; 86.5% success rate of the 3578 direct entry programs
Programs that enter formal system at beginning	4405	9% of 48500 sample
Programs from beginning of formal system that arrive at MS C	2613	5.3% of 48500 sample; 59.3% of 4405 complete formal system
Overall yield arriving at MS C vs those that enter system	N/A	73.1%

Table 28: Additional Data Analysis

Some initial observations are that once a system "enters" the formal acquisition system, it has a better than even chance of making it to Milestone C. As noted above, a program's best chance for success is to enter the system somewhere other than the "beginning" of the formal system. Chances increase from about a 60% success rate for a program entering at the beginning to more than an 85% success rate for programs entering the formal system elsewhere along the line. A graphical depiction of this table may make it easier to understand the particular nuances of the system.

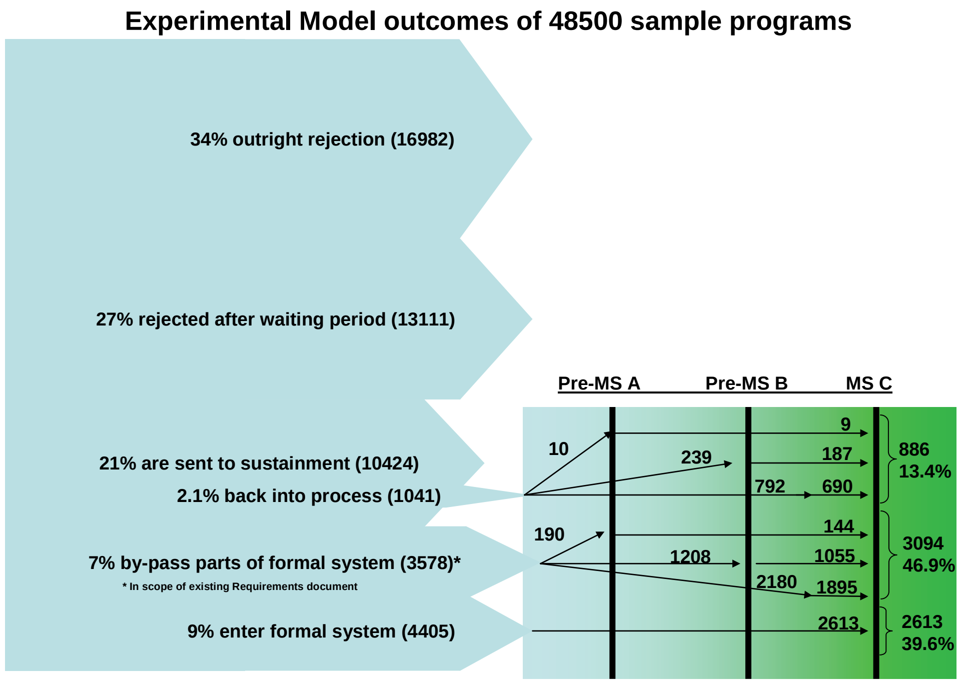


Figure 51: Graphical depiction of model outcomes

Additionally, a few quick observations can be made about the probability of different parts of the system to eliminate programs along the way. For instance, of the 9024 programs that experience any part of the formal system, 2344 of them, or about 26%, are killed by processes within the Requirements Swim Lane across the three phases of the formal system.

Analysis of leading/trailing edges of Requirements process						
trailing edge kill rate		1527	65.1%			
leading edge kill rate		817	34.9%			
		2344	100.0%			
	Pre-A	percent	Pre-B	precent	Pre-C	percent
trailing edge	447	51.1%	388	70.4%	692	75.4%
leading edge	428	48.9%	163	29.6%	226	24.6%
	875	100.0%	551	100.0%	918	100.0%
	37.3%		23.5%		39.2%	
total	2344					

Table 29: Requirements swim lane analysis

The table above elucidates this capability of the requirements swim lane to reject or kill programs. The terms "leading edge" and "trailing edge" refer to the MAJCOM process and the Air

Staff/Joint process respectively. Overall, the air staff/joint processes eliminate programs at a greater than two to one ratio than the MAJCOM processes do. Closer examination shows that both systems eliminate programs in the earliest phases at a nearly equal amount. However, as a program continues later in the process, the MAJCOM requirements process lags the air staff/joint processes in program elimination by a significant margin. A simple and rational explanation is that the longer a program is in the formal system, the more attached the MAJCOM becomes to a program. Such attachment can be explained by reliance upon “sunk costs” as well as building enthusiasm within the MAJCOM for delivery of the system in development. Air Staff and Joint processes seem to retain the ability to be objective or prudent to other realities, be they fiscal or other situations. Still, these observations must be made in light of the 74% of other programs that make it through this swim lane successfully.

Finally, the ability of the acquisition portion of the system to actually eliminate or kill a program is highly constrained. Only about one percent of programs in any part of the formal system are eliminated through the acquisition swim lane. From a rational perspective, this result also makes sense. The Milestone Decision Authority, although it has the authority to kill programs, rarely does so. Even at technical reviews, where there is also a possibility of killing a program, the system is very “forgiving” of programs that don’t pass these reviews. By its own admission, the acquisition swim lane usually implements a “get well plan” versus terminating a poorly performing program. Cost and schedule is easily traded whereas performance or quality is rarely traded in this swim lane.

Conclusions

This chapter examined the model, its performance and preliminary or baseline data results. Analysis to determine a robust sample size was completed as well as using Design Structure Matrix analyses techniques. The results of these efforts lend credibility to the verification and validation discussed in the previous chapter. The DSM analysis also showed how the system is very linear in practice and rather than having large feedback or feed-forward loops, shows how the system can “bog

down" in place until problems or issues are resolved. Additional analysis reveals the effects of the model's probabilistic features and resulting outcomes of the model. Efforts at sensitivity testing show the model behaves as expected and further analysis gives insight into the effectiveness of different swim lane processes.

The model's outcomes using a reasonable sample size form a healthy baseline of expected system performance and also set the standard against which different hypotheses and interventions can be tested and examined.

CHAPTER 8 -- HYPOTHESIS TESTING AND ANALYSIS

Given that the model has been tested, verified and validated, priority can be given to posing experimental questions to see how the model behaves. The data from the model can reveal how the system responds to those questions and provide insight into the overall performance of the system.

Adding to the motivation of exploring various questions, several external factors have emerged that have influenced which questions should be tested. Among these are a memo from the Department of Defense's Undersecretary of Acquisition, Ashton Carter, on 12 May 2009 [125]; the release of the new DOD 5000 series of instructions regarding acquisition in December 2008 [126]; the release of an updated version of JCIDS in March 2009 [127]; and the release of a National Academies of Sciences report in June 2009 [128] about some of the changes being proposed for acquisition.

The memo by Ashton Carter indicates the Department of Defense is going to improve its acquisition processes by making improvements in systems engineering, developmental test and evaluation, technological maturity, and cost estimation. The DOD 5000.02 update also makes some changes in the overall acquisition process. The most notable of these is requiring that all projects be evaluated prior to entry into any part of the acquisition system, as well as changing the emphasis different engineering reviews will receive. The new evaluation can be likened to a major review required prior to entering any portion of the acquisition system. This change directly addresses some criticisms leveled at the old system that allowed programs to "enter" the system at any point the sponsor deemed appropriate. Some additional technical reviews are also proposed. The JCIDS update primarily harmonizes its processes with the updates listed in the 5000.02 instruction and also emphasizes the importance of proper analyses and thorough evaluation of all needs before turning to materiel solutions. The NAS report draws some interesting conclusions that are not easily testable but are relevant to this work and contribute in an anecdotal way. One of which is skepticism about the

increasing frequency of program reviews and questioning the value these reviews impart to the program relative to the time and effort expended.

Hypothesis

It goes without saying that "all models are wrong, but some are useful[57]." In light of this truism, the main hypothesis of this work will attempt to use the developed model, but also acknowledge its shortcomings.

The hypothesis states: "Well thought-out interventions to the overall acquisition system will improve the performance and outcomes of the entire acquisition system."

The existing model of the overall acquisition system will be used to test this hypothesis. These interventions will be structured in the model in a way that attempts to accurately correspond to real-life implementation. Furthermore, "improvement" will be determined based upon an intervention's impact to schedule or performance[58]. However, the results of any interventions implemented in the model will likely represent a lower or upper bound of possible outcomes in the real world system as the model itself tends to be extremely conservative in its results. Much of this conservatism comes from the time distributions that were gathered from expert input. For instance, the time distributions at individual process steps already reckon or account for many of the inherent systemic issues in the task at hand. However, if a change is made that improves the system, the mental framing or task accounting that takes place in the mind of these experts would change and adapt to the overall systemic change thereby changing the time distribution of that particular process. In other words, the model does not have or demonstrate any "memory effects" that would be manifested via a change made early in the system and would then propagate through the rest of the system. This conservatism was discussed earlier as it

[57] This quote has been attributed to George Box, a noted Industrial Statistician

[58] Future work would extend the model's capabilities to "cost."

stems from the way the model is structured and how the main unit of analysis is an individual program. Please see Chapters 5 through 7 for more detailed explanation about the workings of the model.

Key Questions

The key questions relating to this hypothesis are: “How does the model respond to interventions patterned after some of the proposed changes to the overall system?” “Will there be any improvement in the total time required for a program to arrive at MS C?” “Will there be any improvement in overall process quality?”

Detailed explanations of how these interventions are structured to represent reality and model it correctly will be given. The results of the experimentation will also be given along with an analysis of the outcome data. All results will be normalized against the original model baseline mean and significant differences will be explained and analyzed.

The benefit of using this model to test these interventions is that many different tests can be run and examined whereas changing the existing system would require years of patience and careful monitoring before any such benefits to these interventions could ever be measured or realized. Furthermore, there is only a small sample size “active” in the system at any given time – on the order of 100 to 200 programs – and therefore the likelihood of seeing all potential system outcomes is remote. Perhaps these are two of the major difficulties existing in the system, as many different interventions are attempted without being able to discern any impacts these interventions have provided before additional interventions are made – thus complicating the judgment about the efficacy of any real-world intervention.

Experimental Interventions

Twenty different interventions were evaluated. In the following pages, each intervention will be grouped and discussed according to the portion of the system, e.g. which swim lane, in which the

primary intervention takes place. This is a useful way to systematically experiment through the model and also corresponds to likely interventions that would be taken in the actual system since the individual swim lanes are governed and controlled by different organizations.

The results of these interventions will be compared to the original model baseline and shown in a tabular format. The first two columns will always be the same. The first column represents the actual model data from the original model baseline. The second column represents "normalized" values of the first column of data. The data is being normalized to the mean duration of the original model. The mean, standard error, median, standard deviation, sample variance, range, minimum, and maximum were divided by the mean of the original model baseline. For instance, the "normalized" baseline for the mean duration to MS C is equal to 1.0. Normalizing the data will allow more accurate comparisons to be made between the outcomes of the different interventions. The third column will contain the specified intervention outcomes of the above named measures "normalized" to the original model baseline value. The fourth column indicates the differences between the two normalized columns. This last column is where any significant impacts of the interventions will be easily seen. A discussion of the larger differences and their possible meaning will accompany the tabular output.

Requirements Swim Lane Interventions

"Air Staff Intervention"

This intervention explores what will happen with the model outcomes if the process step "Air Staff" is minimized. Practically speaking, this intervention is an attempt to see how the model reacts if a component is eliminated from the system or what would happen if a step on the "critical path" of this swim lane is removed. The "Air Staff" process step refers to the process where the Air Staff coordinates the review of a given JCIDS document between the other services and also different MAJCOMs. This step is encountered by every Requirements document as it passes between the MAJCOM and the more

"formalized" portion of JCIDS. This particular intervention was also discussed in Chapter 7 under the heading of "Model Sensitivities."

Are there any coupling effects that would drastically change the way the model behaves or will the model outcomes change in a linear fashion, e.g. a 1 for 1 reduction in time?

Exit at MS C	*Baseline*	*Normalized Baseline*	*air staff intervention*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.91	**0.00**
Standard Deviation (days)	1546.24	0.41	0.40	**0.01**
Sample Variance	2390873.19	0.16	0.16	**0.01**
Kurtosis	-0.07	-0.07	-0.08	**0.02**
Skewness	0.76	0.76	0.74	**0.01**
Range (days)	8696.34	2.28	2.18	**0.10**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.48	**0.10**
Program Count	6593.00	6593.00	6653.00	**-60.00**
Arrive at MS C	6593.00	1.00	1.01	**-0.01**

Table 30: Air Staff intervention results

These results do indicate a linear relationship exists. When looking at the mean of all the experimental results, it compares very favorably with the baseline. However, those programs that are at the maximum duration (or those that run into problems and have to repeat certain portions of the system) find that the elimination of this one step reduces the potential time by a multiplier of 0.1 from the mean outcome. The minimum does not change, but the maximum duration changes. Instead of taking 2.58 times the mean for the maximum duration program, it only requires 2.48 times the baseline for maximum duration program. For further explanation, in all likelihood, the baseline maximum encountered random air staff processes at the maximum time for that process during the three phases between milestones A and C and the intervention maximum didn't have to deal with these processes at all.

"MAJCOM approval bodies"

This intervention is designed to eliminate any calendar waiting time in the MAJCOM requirements swim lane and approval process. The meaning of this intervention would be similar to increasing the capacity of the approval process portion of the system in that people are always readily available to consider any requirement document for approval. There is no waiting time to approach the proper individuals for approvals. What kind of impact will making this change cause?

Exit at MS C	*Baseline*	*Normalized Baseline*	*MAJCOM approval bodies*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.91	**0.00**
Standard Deviation (days)	1546.24	0.41	0.40	**0.01**
Sample Variance	2390873.19	0.16	0.16	**0.01**
Kurtosis	-0.07	-0.07	-0.02	**-0.05**
Skewness	0.76	0.76	0.77	**-0.01**
Range (days)	8696.34	2.28	2.04	**0.24**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.34	**0.24**
Program Count	6593.00	6593.00	6549.00	**44.00**
Arrive at MS C	6593.00	1.00	0.99	**0.01**

Table 31: MAJCOM approval bodies result

These results indicate similar outcomes as the other intervention in this swim lane. There is virtually no change in the mean program outcome as well as no changes in the "shape" of the distribution curve. The "shape" can indicate quality impacts, e.g. skewness away from the mean or kurtosis indicating the clustering around the mean, if the overall distribution becomes more narrow, e.g. the variance is reduced, or the range of the distribution is narrowed, e.g. the overall program length is reduced by a factor of 0.24 from the mean baseline program length. In this case, only the maximum program length is affected as in the previous intervention. This is explained by a program going through the entire process, e.g. three approval processes for each milestone, at the maximum duration.

"Critical Comments"

This intervention is designed to eliminate the process of critical comments, an existing process step in the requirements swim lane whereby a requirements document can be held up to adjudicate comments to a requirements process. The process owners indicated a great deal of frustration with "critical comments" that held up a document in the approval process. This step kicks off a large "redo" loop to address those comments. In this case, the model was modified so that there would be zero probability of a document having any critical comments. The results follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*critical comments*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.01**
Standard Deviation (days)	1546.24	0.41	0.40	**0.01**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.06	**-0.01**
Skewness	0.76	0.76	0.77	**-0.02**
Range (days)	8696.34	2.28	2.05	**0.23**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.34	**0.23**
Program Count	6593.00	6593.00	6517.00	**76.00**
Arrive at MS C	6593.00	1.00	0.99	**0.01**

Table 32: Critical comments results

These results also indicate very little difference from the other interventions studied. There is a 0.23 factor difference on the maximum outcome of the intervention compared to the mean.

Planning, Programming, Budgeting, Execution System Swim Lane Interventions

"Funding Stability"

This intervention addresses one of the other main issues listed by multiple studies as well as interviews conducted for this study. The feeling was that the instability caused by funding changes had a dramatic impact on the overall system outcomes. For this intervention, the probability that any

chance of funding instability occurred during any phase was eliminated. Furthermore, the probability that funding was not available for any study or activity at the time such funding was required was also reduced to zero. The results follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*Funding Stability*	***Delta***
Mean (days)	3806.63	1.00	0.96	**0.04**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.88	**0.03**
Standard Deviation (days)	1546.24	0.41	0.38	**0.03**
Sample Variance	2390873.19	0.16	0.14	**0.02**
Kurtosis	-0.07	-0.07	-0.30	**0.23**
Skewness	0.76	0.76	0.66	**0.09**
Range (days)	8696.34	2.28	1.83	**0.46**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.12	**0.46**
Program Count	6593.00	6593.00	6554.00	**39.00**
Arrive at MS C	6593.00	1.00	0.99	**0.01**

Table 33: Funding Stability Results

The model suggests that this particular intervention does make a difference –on the order of approximately 4%. The mean is 4% less than the baseline and the median is reduced by a similar amount, 3%. Furthermore, the kurtosis narrowed considerably – noted by the change from the baseline of 0.23. Finally, the range of the distribution also narrowed considerably, by a factor of 0.46. Therefore, the intervention does make a difference. Even so, the magnitude of this result was much less than expected. Further examination of this phenomenon will be future work.

Acquisition Swim Lane Interventions

"Acquisition Kill"

This intervention increased the probability that a program has the potential to be killed at every acquisition decision point. Rather than every milestone decision point and concept selection decision point being highly likely to succeed, the intervention changed this probability to just 50%. Far fewer programs should make it to MS C. Are there other effects on the system with this intervention?

Exit at MS C	*Baseline*	*Normalized Baseline*	*Acquisition Kill*	***Delta***
Mean (days)	3806.63	1.00	0.91	**0.09**
Standard Error	19.04	0.01	0.01	**0.00**
Median (days)	3472.15	0.91	0.81	**0.10**
Standard Deviation (days)	1546.24	0.41	0.38	**0.03**
Sample Variance	2390873.19	0.16	0.14	**0.02**
Kurtosis	-0.07	-0.07	1.19	**-1.26**
Skewness	0.76	0.76	1.20	**-0.45**
Range (days)	8696.34	2.28	2.27	**0.01**
Minimum (days)	1119.06	0.29	0.31	**-0.01**
Maximum (days)	9815.40	2.58	2.58	**0.00**
Program Count	6593.00	6593.00	3574.00	**3019.00**
Arrive at MS C	6593.00	1.00	0.54	**0.46**

Table 34: Acquisition Kill results

These results show a significant impact on the mean, the kurtosis, the skewness, and the total number of programs that actually make it to MS C. What this intervention clearly shows is that changing the probability of going forward in the system does make a significant difference. However, it still does not change any process variance. Therefore, the range of the distribution does not change at all. What has also happened is that since the majority of programs circumvent some portion of the system, it meets these potential kill points less frequently than those programs that go through the entire system. The result is that more systems are killed that go through the entire process. What this does it that it shifts the mean of all outcomes to the left, the distribution remains skewed to the maximum program outcome and the tightness of the mean has flattened out. The final result is that at MS C programs that skip portions of the process are even more favored than before and the proportion of programs that have skipped a portion of the process increases substantially.

"Approval Body"

This intervention targets those processes in the acquisition swim lane immediately prior to Acquisition Panel activities or more simply, a calendar waiting activity. This intervention eliminates these waiting periods. The intervention is akin to the acquisition process becoming more agile and

responsive to approval activities than ever before. In some sense, there is extra capacity available for these approval bodies to meet without delay. The results of this intervention follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*Approval body*	***Delta***
Mean (days)	3806.63	1.00	0.98	**0.02**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.01**
Standard Deviation (days)	1546.24	0.41	0.39	**0.02**
Sample Variance	2390873.19	0.16	0.15	**0.01**
Kurtosis	-0.07	-0.07	-0.08	**0.01**
Skewness	0.76	0.76	0.74	**0.02**
Range (days)	8696.34	2.28	2.05	**0.23**
Minimum (days)	1119.06	0.29	0.29	**0.01**
Maximum (days)	9815.40	2.58	2.34	**0.24**
Program Count	6593.00	6593.00	6604.00	**-11.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 35: Approval bodies results

This intervention is not unlike many of those seen in the requirements swim lane. The range and maximum program duration is affected. Very little else is affected. The reasons for the changes from the baseline are similar if not identical to the other changes mentioned.

"Technical Interventions"

The technical intervention described here refers to the random technical uncertainty processes that exist prior to MS B and MS C. This uncertainty is used to account for unknown unknowns in the execution of development contracts. When these unknown unknowns are encountered, they range the gamut from technical problems that were not foreseen to conditions out of the control of all parties, such as a natural disaster or other event that has a cost and/or schedule impact on the program. This intervention eliminates all possibility of this from happening. It likely represents the lower bound of the impact of improved processes relating to the quality of the program going through the system.

Exit at MS C	Baseline	Normalized Baseline	technical interventions	**Delta**
Mean (days)	3806.63	1.00	0.97	**0.03**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.89	**0.03**
Standard Deviation (days)	1546.24	0.41	0.39	**0.02**
Sample Variance	2390873.19	0.16	0.15	**0.02**
Kurtosis	-0.07	-0.07	-0.19	**0.12**
Skewness	0.76	0.76	0.72	**0.04**
Range (days)	8696.34	2.28	1.99	**0.29**
Minimum (days)	1119.06	0.29	0.29	**0.01**
Maximum (days)	9815.40	2.58	2.28	**0.30**
Program Count	6593.00	6593.00	6615.00	**-22.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 36: Technical Interventions Results

This intervention not only affected the mean time through the system, e.g. improved it by 3%, but also reduced the range by a factor of 0.3, considerably more than other interventions and similar to the change wrought by the funding instability intervention. The change in the kurtosis indicates a more rounded peak and shorter thinner tails due to frequent, modestly-sized deviations. In other words, this intervention affected those programs that otherwise would have been considered "problematic" and are near the maximum end of the spectrum of program durations. These problematic programs are the ones that not only have the unexpected technical issues arise during the execution of the program—which have been eliminated by this intervention—but also are those that deal with budget cuts continually and other issues not related to the unknown and unexpected technical issues.

"PDR Intervention"

This intervention eliminated any probability of failing the Preliminary Design Review. The nearest demonstration of this outcome in reality would be due to the quality of the processes and the program itself increasing considerably. This represents the lower bound of possible distribution outcomes. It is a lower bound because it is the best improvement that is possible while in reality there will always be some probability of failing PDR.

Exit at MS C	*Baseline*	*Normalized Baseline*	*PDR Intervention*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.91	**0.01**
Standard Deviation (days)	1546.24	0.41	0.40	**0.00**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.12	**0.05**
Skewness	0.76	0.76	0.74	**0.02**
Range (days)	8696.34	2.28	2.14	**0.15**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.43	**0.15**
Program Count	6593.00	6593.00	6594.00	**-1.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 37: PDR intervention results

This intervention had a significant impact on those programs that otherwise would have failed one or two PDRs and finally being successful. Therefore it affects the range and maximum of the distributions the most. The model shows that this intervention is best suited for programs that normally would have been plagued by quality problems.

"CDR Intervention"

The Critical Design Review intervention is identical to the PDR one in that the intervention made was to reduce the probability of failure at this step to zero. Again this would be a quality intervention. The results follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*CDR intervention*	***Delta***
Mean (days)	3806.63	1.00	0.98	**0.02**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.01**
Standard Deviation (days)	1546.24	0.41	0.39	**0.02**
Sample Variance	2390873.19	0.16	0.15	**0.01**
Kurtosis	-0.07	-0.07	-0.15	**0.08**
Skewness	0.76	0.76	0.72	**0.03**
Range (days)	8696.34	2.28	2.10	**0.19**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.39	**0.19**
Program Count	6593.00	6593.00	6605.00	**-12.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 38: CDR Intervention

This intervention had a significant impact on those programs that otherwise would have failed one or two CDRs until finally being successful. Therefore it affects the range and maximum of the distributions the most. The model shows that this intervention is best suited for programs that normally would have been plagued by quality problems.

"DRR Intervention"

The Intervention at the Design Readiness Review point is similar to the PDR and CDR interventions reflecting quality improvements.

Exit at MS C	*Baseline*	*Normalized Baseline*	*DRR*	***Delta***
Mean (days)	3806.63	1.00	1.00	**0.00**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.91	**0.00**
Standard Deviation (days)	1546.24	0.41	0.41	**0.00**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.07	**0.00**
Skewness	0.76	0.76	0.76	**-0.01**
Range (days)	8696.34	2.28	2.28	**0.00**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.58	**0.00**
Program Count	6593.00	6593.00	6611.00	**-18.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 39: DRR Intervention

The DRR intervention did not have an appreciable impact on any aspect of the program characteristics or distribution data.

"TRR Intervention"

The Test Readiness Review is an essential part of any program and this intervention was to assess the impact of increasing the quality of the program such that there was zero probability of failing this review. The results follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*TRR*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.01**
Standard Deviation (days)	1546.24	0.41	0.41	**0.00**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.06	**-0.01**
Skewness	0.76	0.76	0.77	**-0.01**
Range (days)	8696.34	2.28	2.28	**0.00**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.58	**0.00**
Program Count	6593.00	6593.00	6608.00	**-15.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 40: TRR Intervention Results

This particular activity does not seem to have an appreciable impact on the performance of the model. This outcome is somewhat surprising since testing and scheduling of test ranges was raised in the discussion with various interviewees as an area of concern. This issue will be looked at for future work.

"Test trades intervention"

Following testing activities, there is some probability that additional engineering would need to be done and "trades" made to adapt the program to address the results of the last series of tests. Testing is an area that was identified as one that could be very problematic through the various interviews. Many people and studies had pointed to issues dealing with test, from problems ranging

from securing test range facilities to large amounts of rework to fix uncovered problems. An intervention here eliminates any probability that testing would uncover any technical issues requiring additional work or test range time. This intervention falls within the "quality" category as improving the overall quality of programs in the system would decrease the likelihood of needing to make additional technical trades after testing. The results of the intervention are shown below.

Exit at MS C	*Baseline*	*Normalized Baseline*	*test trades*	***Delta***
Mean (days)	3806.63	1.00	0.99	**0.01**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.01**
Standard Deviation (days)	1546.24	0.41	0.41	**0.00**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.06	**0.00**
Skewness	0.76	0.76	0.76	**-0.01**
Range (days)	8696.34	2.28	2.24	**0.05**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.53	**0.05**
Program Count	6593.00	6593.00	6567.00	**26.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 41: Test trades intervention results

It appears that only programs that run into "problems" or those programs comprising the "maximum" of the range of outcomes is positively affected by this intervention. Improving this process, with respect to improving availability of test ranges, does not seem to provide a large return compared to some of the other interventions. However, if the program is extremely large, complex and expensive, having slack in the availability of test ranges may prove to be worthwhile. Future work would have to determine the circumstances where the cost/benefit analysis would prove beneficial.

"SVR Intervention"

The System Verification Review is the final culminating review prior to MS C and failure of this review should have significant results. Like the TRR, the SVR probability of failure was eliminated, suggesting great quality in the programs meeting this review.

Exit at MS C	*Baseline*	*Normalized Baseline*	*SVR*	***Delta***
Mean (days)	3806.63	1.00	1.00	**0.00**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.91	**0.00**
Standard Deviation (days)	1546.24	0.41	0.41	**0.00**
Sample Variance	2390873.19	0.16	0.16	**0.00**
Kurtosis	-0.07	-0.07	-0.08	**0.01**
Skewness	0.76	0.76	0.75	**0.00**
Range (days)	8696.34	2.28	2.28	**0.00**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.58	**0.00**
Program Count	6593.00	6593.00	6591.00	**2.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 42: SVR Intervention

Like the TRR intervention, the SVR results show no appreciable impact to the outcomes of the model distribution. Equally, this is a surprise that will be reserved for future work. However, it can be explained that by the time a program reaches this point in the development, so much "history" already exists in the program that any delays encountered at this point are negligible compared to the total program baseline.

Other combinations

"Systems Engineering Intervention"

This intervention is the combination of all of the systems engineering type interventions previously discussed, e.g. PDR, CDR, DRR, TRR, SVR. This intervention is probably a better representation of quality improvements to any program as good quality from the beginning would propagate throughout the entire system. The results follow.

Exit at MS C	Baseline	Normalized Baseline	SE	**Delta**
Mean (days)	3806.63	1.00	0.93	**0.07**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.85	**0.06**
Standard Deviation (days)	1546.24	0.41	0.37	**0.04**
Sample Variance	2390873.19	0.16	0.14	**0.03**
Kurtosis	-0.07	-0.07	-0.35	**0.28**
Skewness	0.76	0.76	0.67	**0.09**
Range (days)	8696.34	2.28	1.76	**0.52**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.05	**0.52**
Program Count	6593.00	6593.00	6632.00	**-39.00**
Arrive at MS C	6593.00	1.00	1.01	**-0.01**

Table 43: Systems Enginering Interventions

While most of the Systems Engineering interventions did not have much of an appreciable impact, the totality of all SE improvements showed improvements in many areas. First the mean of the programs was reduced by 7%. The range of outcomes was reduced from nearly 2.5 times the mean to only about 2 times the mean. The distribution itself was marked by a sharper peak, and longer fatter tails due to infrequent, extreme deviations as well as the skew becoming less pronounced. Clearly improving these processes or improving the quality of the overall system was manifested in these results. While they represent the theoretical “lower bound”, Systems Engineering done well does make a substantial difference, especially with those programs that otherwise would have been “problematic.”

“SE & Acquisition Kill Interventions”

Coupling the above intervention with the Acquisition Kill intervention should provide some interesting results based upon the stand-alone versions.

Exit at MS C	*Baseline*	*Normalized Baseline*	*SE and Acquisition*	***Delta***
Mean (days)	3806.63	1.00	0.84	**0.16**
Standard Error	19.04	0.01	0.01	**0.00**
Median (days)	3472.15	0.91	0.74	**0.17**
Standard Deviation (days)	1546.24	0.41	0.34	**0.07**
Sample Variance	2390873.19	0.16	0.12	**0.05**
Kurtosis	-0.07	-0.07	0.92	**-0.99**
Skewness	0.76	0.76	1.16	**-0.41**
Range (days)	8696.34	2.28	1.76	**0.52**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	2.05	**0.53**
Program Count	6593.00	6593.00	3572.00	**3021.00**
Arrive at MS C	6593.00	1.00	0.54	**0.46**

Table 44: SE and Acquisition Kill Intervention Results

This intervention shows a great deal of reductions across the board. The reasons for the changes remain the same for both the SE intervention and the Acquisition Kill intervention discussed earlier and these effects seem to be merely additive. There is little evidence of unique coupling interactions in the data outcome distribution.

"MAJCOM & Acquisition approval bodies intervention"

Using a combination of these two previously tried interventions will also explore the interaction of these interventions, if any, and determine how these change the outcomes of the model results. These two particular interventions were chosen to try since they both deal with eliminating calendar delays. The practical interpretation is that the DOD will improve the capacity, e.g. manning, of both JCIDS and Acquisition sufficiently so that there is no need for any delay or waiting time. The results follow.

Exit at MS C	*Baseline*	*Normalized Baseline*	*approval bodies and MAJCOM*	***Delta***
Mean (days)	3806.63	1.00	0.97	**0.03**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.90	**0.02**
Standard Deviation (days)	1546.24	0.41	0.38	**0.02**
Sample Variance	2390873.19	0.16	0.15	**0.02**
Kurtosis	-0.07	-0.07	-0.01	**-0.06**
Skewness	0.76	0.76	0.76	**0.00**
Range (days)	8696.34	2.28	2.06	**0.23**
Minimum (days)	1119.06	0.29	0.28	**0.01**
Maximum (days)	9815.40	2.58	2.34	**0.24**
Program Count	6593.00	6593.00	6558.00	**35.00**
Arrive at MS C	6593.00	1.00	0.99	**0.01**

Table 45: MAJCOM and Acquisition approval bodies intervention results

The combination of these two interventions only shows an additive contribution regarding the mean and kurtosis of the baseline program outcome distribution. However, the range and maximum are not additive – they are the same. The implications for this result is that while standing alone they appear to be on the critical path, together these interventions only have a significant effect upon those programs that go through the entire acquisition system and therefore are exposed to more "opportunities" of encountering these kinds of processes.

"Funding and technical uncertainty intervention"

A combination of these two interventions was chosen because it represented two of the most commented areas of frustration among participants in the overall system. It also seems reasonable that any intervention taken on a large scale would address portions of these issues. The following table shows the results of this intervention strategy.

Exit at MS C	Baseline	Normalized Baseline	funding and technical	**Delta**
Mean (days)	3806.63	1.00	0.93	**0.07**
Standard Error	19.04	0.01	0.00	**0.00**
Median (days)	3472.15	0.91	0.86	**0.05**
Standard Deviation (days)	1546.24	0.41	0.36	**0.04**
Sample Variance	2390873.19	0.16	0.13	**0.03**
Kurtosis	-0.07	-0.07	-0.36	**0.29**
Skewness	0.76	0.76	0.63	**0.12**
Range (days)	8696.34	2.28	1.73	**0.56**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.03	**0.55**
Program Count	6593.00	6593.00	6566.00	**27.00**
Arrive at MS C	6593.00	1.00	1.00	**0.00**

Table 46: Funding and Technical Uncertainty Intervention Results

These results were also surprising. It was expected that these two interventions combined would have a much greater impact on the overall mean of the program outcomes. Interestingly, only the mean and the skewness results were cumulative in their affect on outcomes versus the normalized baseline. However, the kurtosis, range, and maximum are not. Still, a 0.56 factor reduction in the range of the system is significant and speaks to the effect that these interventions have on those programs that go through the entire baseline. The other programs that skip and circumvent portions of the system do not experience these interventions as much. This explains why the mean of the experimental outcome is not affected as much.

"Random Eight intervention"

The Random Eight intervention is named from the random combination of previously tried strategies into a single intervention. These eight interventions are: funding stability, acquisition termination points, technical uncertainty, acquisition approval bodies, CDR, MAJCOM approval bodies, PDR, and air staff process interventions. The purpose of this combined intervention is to determine how a random combination affects the outcome of the model.

Exit at MS C	*Baseline*	*Normalized Baseline*	*top 8 intervention*	***Delta***
Mean (days)	3806.63	1.00	0.83	**0.17**
Standard Error	19.04	0.01	0.01	**0.00**
Median (days)	3472.15	0.91	0.76	**0.15**
Standard Deviation (days)	1546.24	0.41	0.32	**0.09**
Sample Variance	2390873.19	0.16	0.10	**0.06**
Kurtosis	-0.07	-0.07	0.54	**-0.61**
Skewness	0.76	0.76	1.01	**-0.25**
Range (days)	8696.34	2.28	1.64	**0.65**
Minimum (days)	1119.06	0.29	0.29	**0.00**
Maximum (days)	9815.40	2.58	1.93	**0.65**
Program Count	6593.00	6593.00	3555.00	**3038.00**
Arrive at MS C	6593.00	1.00	0.54	**0.46**

Table 47: Random Eight Intervention results

These interventions together show significant impacts across almost every measure compared to the baseline case. A seventeen percent reduction in the overall mean of programs going through the system is significant. Furthermore, reducing the maximum outcome from about two and one half times the baseline mean to less than two times the baseline mean is a significant reduction. Furthermore, with the drop in the mean outcome, it is the handful of “problem” programs that drive the large skew to the right. All other measures point to improvements from the baseline, assuming less time and variance is “better.”

This outcome speaks to the value of continuous improvement. There is room for it to occur in the existing system. The larger question that this outcome raises is what the “cost” to achieve these improvements is. Are there other interventions that when combined would achieve nearly as impressive improvements as this one?

Greatest Impact Interventions

This section looks at the impacts of those interventions that had the greatest impacts overall.

"Top Three Intervention"

Looking at all of the individual interventions, the three interventions that contributed to the largest reduction in the mean versus the baseline were selected for this intervention. These three were funding stability, acquisition kill points, and technical uncertainty. The following table shows the results of this combination.

Exit at MS C	*Baseline*	*Normalized Baseline*	*top 3 intervention*	***Delta***
Mean (days)	3806.63	1.00	0.85	**0.15**
Standard Error	19.04	0.01	0.01	**0.00**
Median (days)	3472.15	0.91	0.76	**0.15**
Standard Deviation (days)	1546.24	0.41	0.34	**0.06**
Sample Variance	2390873.19	0.16	0.12	**0.05**
Kurtosis	-0.07	-0.07	0.66	**-0.73**
Skewness	0.76	0.76	1.08	**-0.33**
Range (days)	8696.34	2.28	1.79	**0.50**
Minimum (days)	1119.06	0.29	0.30	**0.00**
Maximum (days)	9815.40	2.58	2.09	**0.49**
Program Count	6593.00	6593.00	3535.00	**3058.00**
Arrive at MS C	6593.00	1.00	0.54	**0.46**

Table 48: Top Three Interventions Results

The results of this intervention show all of the similar improvements that the Random Eight Intervention did, but the improvements were not to the same degree. Still, the 3% difference in means between interventions of the eight randomly chosen ones and this intervention show that some interventions are worth more than others. It also underscores the fact that some interventions will be far more costly than others to implement. Therefore, careful analysis and weighing of alternatives should be done before making any changes to the system.

"All interventions"

Having tested various combinations, this intervention seeks to determine what the impact of all of the individual interventions, when combined, would be. While implementation of all of these

interventions is probably not realistic, the results would certainly represent the “lower bound” of all possible improvements that could be made to the system.

Exit at MS C	*Baseline*	*Normalized Baseline*	*All interventions*	***Delta***
Mean (days)	3806.63	1.00	0.81	**0.19**
Standard Error	19.04	0.01	0.01	**0.00**
Median (days)	3472.15	0.91	0.73	**0.18**
Standard Deviation (days)	1546.24	0.41	0.32	**0.09**
Sample Variance	2390873.19	0.16	0.10	**0.06**
Kurtosis	-0.07	-0.07	0.65	**-0.72**
Skewness	0.76	0.76	1.05	**-0.30**
Range (days)	8696.34	2.28	1.60	**0.68**
Minimum (days)	1119.06	0.29	0.28	**0.01**
Maximum (days)	9815.40	2.58	1.88	**0.69**
Program Count	6593.00	6593.00	3544.00	**3049.00**
Arrive at MS C	6593.00	1.00	0.54	**0.46**

Table 49: All Interventions combined results

These results show that combining all of the previously tested interventions results in a 19% reduction of the mean of all programs going through the system when compared to the baseline case. Furthermore, the range and maximum outcomes are significantly reduced from the baseline case with the maximum only 1.88 times the mean of the baseline case. It is also likely that these are very conservative results. A potential consequence of the sheer number of programs in the system being reduced might also bring with it additional process effects that reduce the overall time required for individual process steps to be accomplished since they are not “saturated” or operating at or near capacity.

Final Analysis and Conclusions

Looking only at specific aspects of the interventions, some patterns emerge that are worth discussion. First, a look at the greatest impacts on the mean outcome by intervention type will be taken followed by looks at other outcome descriptors.

Mean outcome: in order of impact compared to baseline 1.0 (value / percent reduction)

All interventions	(0.81 / 19%)
Eight random interventions	(0.83 / 17%)
SE and Acquisition termination	(0.84 / 16%)
"Top three"	(0.85 / 15%)
Acquisition termination	(0.91 / 9%)
SE / funding stability and technical uncertainty (tie)	(0.93 / 7%)
Funding stability	(0.96 / 4%)
Technical uncertainty	(0.97 / 3%)

Median outcome: in order of impact compared to baseline 0.91 (value/percent reduction)

All interventions	(0.73 / 19.7%)
SE and Acquisition termination	(0.74 / 18.6%)
Top three / eight random interventions (tie)	(0.76 / 16.4%)
Acquisition termination	(0.81 / 11%)
Systems Engineering	(0.85 / 6.5%)
Funding stability and technical uncertainty	(0.86 / 5.4%)
Funding stability	(0.88 / 3.2%)
Technical uncertainty	(0.89 / 2.2%)

Maximum outcome: greatest impact in reduction compared to baseline value (2.58)

All interventions	(1.88 / 27.1%)
Eight random interventions	(1.93 / 25.2%)
Funding stability and technical uncertainty	(2.03 / 21.2%)
Systems Engineering / SE & Acquisition termination (tie)	(2.05 / 20.5%)
Top three	(2.09 / 19.0%)
Funding stability	(2.12 / 17.8%)
Technical uncertainty	(2.28 / 11.6%)

Range outcome: Greatest impact in reduction of range from baseline value (2.28)

All interventions	(1.60 / 29.8%)
Eight random interventions	(1.64 / 28%)
Funding stability and technical uncertainty	(1.73 / 24%)
Systems Engineering / SE & Acquisition termination (tie)	(1.76 / 22.8%)
Top three	(1.79 / 21.5%)
Funding stability	(1.83 / 19.7%)
Technical uncertainty	(1.99 / 12.7%)

Skewness outcome: Larger right tail in distribution than baseline value (0.76)

Acquisition termination	(1.2)
SE and Acquisition termination	(1.16)
Top three	(1.08)

All interventions	(1.05)
Eight random interventions	(1.01)
Smaller right tail in distribution than baseline (0.76)	
Funding stability and technical uncertainty	(0.63)
Systems engineering	(0.67)
Funding stability	(0.66)

Kurtosis outcome: Higher number (sharper peak, longer fatter tails due to infrequent, extreme deviations)

Acquisition termination	(1.19)
SE and Acquisition termination	(0.93)
Top three	(0.66)
All interventions	(0.65)
Eight random interventions	(0.54)

Smaller number (more rounded peak and shorter thinner tails due to frequent, modestly-sized deviations)

Funding stability and technical uncertainty	(-0.36)
Systems Engineering	(-0.35)
Funding stability	(-0.30)
Technical uncertainty	(-0.19)
CDR	(-0.15)

Taking a broader look at all of the interventions and their outcomes, generally three types of effects were noted. These effects were seen in: the average time for a program to reach MS C; the distribution characteristics of programs reaching MS C, e.g. skew, kurtosis, range; and the total number of programs reaching MS C.

Regarding the first effect, if total time to MS C is valued, multiple interventions will be required for the largest effect. The “best” experimental data outcomes were composed of multiple interventions while the “best” postulated improvement is nearly 20% less than current baseline mean duration. However, the actual improvement if these interventions are implemented is likely much less than experimental data results.

Regarding the second effect, if “predictability” or minimizing variance across programs is valued, then the interventions favored by the experimental data are somewhat different. Those seen to be

most promising consist of “quality” interventions such as: reducing funding instability, reducing technical uncertainty, and improving SE processes. These interventions will be among the most difficult to implement, maintain and measure during the existence of a typical program.

Regarding the third effect, if process throughput and capacity of the overall system are valued, then interventions that increase the probability of program being terminated should be implemented. From the experimental interventions, only one intervention substantially impacted the total count of programs arriving at MS C: increasing the probability of a program being killed at major milestone and other reviews (Acquisition termination). Interventions like these address some of the “portfolio” capabilities that could be wielded by individuals at these process points. These capabilities would add additional “portfolio effects” which are currently not addressed in the model. For instance, processes operating at or near saturation levels would decrease; their efficiency would likely increase and timeliness would likely decrease; and some of the other instabilities present in the system would be reduced.

There is NO silver bullet for dramatic system improvements. Intertwined processes invoke emergent behaviors that are not easily controlled by specific interventions. Acquisition termination capabilities are desirable but not likely given acquisition authority is limited. The experimental intervention settings are contrived, e.g. it is not realistic that 50% of all decisions will terminate programs. Funding stability is a laudable goal but is not realistic with the current PPBE configuration; e.g. zero-sum budgeting, “savings” not accrued but used for other demands; demand exceeds supply. The technical uncertainty intervention is not possible to be eliminated, but many quality interventions will have largest impacts. Counting on increased success at PDR and CDR is theoretically possible due to the increased emphasis by the DOD on Systems Engineering, but is not guaranteed. Eliminating processes will reduce time in the system but it also suggests a strong need to determine the value added

by existing process steps. Are they really worth the time and effort? Is the payoff commensurate with the investment?

In closing, the model of the overall acquisition system has fulfilled its purposes and has allowed the main hypothesis of many well thought out interventions to be tested. Significant insight has been gained into the system's behavior through the application of these various interventions. Certainly there are other interventions that can be tested, but the analysis above represents a reasonable set of potential interventions as well as those designed to probe the workings of the model. The closing chapter will address these and other significant findings made in the course of this research.

CHAPTER 9 -- CONCLUSIONS AND SUMMARY

The overarching theme and motivation for this work has been to better understand the operation of the big “A” of acquisition. This large system has so many moving parts and is so full of complexity that other approaches and attempts to identify and characterize many of the drivers of the system have fallen short. This work also does not purport to be or present the defining answer for all of the systems’ woes. However, it does shed new insight and provide a different mechanism to look at the behaviors of the overall system as well as provide an opportunity to selectively test different interventions and analyze those outcomes. This work has collectively tried to approach the problem from both a qualitative as well as a quantitative standpoint, trying to find a balance between the way the system should work and the way that it really does work. It has also sought to capture the concerns of the people working within the system as well as the constraints imposed by the system.

Nevertheless, this is the first time that the overall acquisition system has been modeled in this fashion. According to a retired Air Force civilian, with an extensive background in the acquisition system, when presented with some of the results from the model, felt that this effort represented the first successful “model” of the entire enterprise. He explained how it bears resemblance to a failed effort led by the Air Force in the 1980s, which was called the Air Force Acquisition Model. Most Air Force professionals are familiar with the legacy of this failed effort, which evolved into the Air Force Acquisition Desk Book and later to the online Air Force Acquisition Knowledge Sharing System. The legacy system today is merely a collection of best practices, vignettes, and working knowledge obtained and shared by other acquisition professionals.

Qualitative Observations

The following observations are qualitative in that they are not substantiated through the output of the model representing the acquisition enterprise. However, these observations tend to provide

additional context to the more quantitative research stemming from the output of the model. They represent an expression of the various people interviewed throughout the course of this research effort. Furthermore, these observations often did not surface until after both qualitative studies, e.g. the two separate interview efforts, were completed and analyzed. Some required the additional insights gained during some of the validation activities to emerge.

Observation No. 1: Portfolio management for acquisition is not an appropriate metaphor to use to describe the management and operation of the Acquisition system. Initially, a great deal of effort was made into understanding the way the system worked. An assumption and framing mechanism to understand the system was to examine if portfolio management, as practiced by fund managers on Wall Street, would be an appropriate analog to apply to weapon system development for the Department of Defense. However, the research shows this is not the case. The limitations to practicing product portfolio management in defense acquisition are due to a variety of factors outside of the control of portfolio managers. Most notably, these are the diffusion of responsibility and accountability for programs and their development. Both the art and science of portfolio management lack measures that provide meaningful direction to portfolio leaders. Therefore, using portfolios and portfolios of programs to manage defense acquisition probably delivers no advantage other than streamlining the reporting and accountability process back to Congress. This observation stems from the work reported on in Chapter 3.

Observation No. 2: Some of the systems aspects to the overall system include the fact that many people do not understand the workings of one segment or swim lane from another. The swim lanes are indeed coupled, but the understanding of how they are coupled is not well understood. Most people understand how to do their job very well, as well as how their job or process relates to processes immediately upstream or downstream as well as any lateral moves into other swim lanes. However, understanding of the overall system beyond these limited views is lacking. This phenomenon

gives rise to behaviors that seek to optimize processes and decisions locally instead of globally. The overall system is full of actors whose rational thinking, therefore, drives system behaviors that are less than ideal or optimal from a system perspective. The initial observations and analysis of interview data in Chapter 3 as well as some of the findings reported in the section titled "Data Coding and Analysis" lend credence to this observation. Furthermore, the section in Chapter 4 titled, "Results and Analysis," underscore these observations, particularly in the areas of "Interdependencies," "Money differences in acquisition phases," and "Money drills."

Observation No. 3: Risk is important, but how it is important is becoming lost in the details. There are too many systemic risks, beyond that of ordinary program risk management, that are simply not being addressed. These risks are cross-cutting and are not easily characterized with the current toolset available to professionals in the acquisition system. These risks deal with the organizational and architectural construct of the current acquisition system, the interdependencies between programs, and the achievement of national security goals. Who within the system has the responsibility as well as the authority to deal with these risks? This observation was the key theme to all of Chapter 3 and was perpetuated in the "Other Identified Issues" reported on in Chapter 4.

Observation No. 4: The acquisition system is operating well beyond its capacity and does not have the numbers or the skilled personnel necessary to handle the workload. Additionally, other resources, including money, are constrained. These conditions lead to classic firefighting behaviors as reported in the product development literature. There is little, if any, availability for more personnel to think strategically; rather they are operating in a tactical day-to-day mode. One might argue fewer programs would actually translate to lower demands on the system, but this is far from certain. Finally, there is another component to the acquisition system that has a huge impact on system capacity but was out of the scope of this research: the sustainment activities that occur with existing weapon systems. The acquisition system and acquisition personnel are also responsible for working these

activities. In total, the things that are measured and evaluated in the system are often tangential to the actual job of delivering a program, e.g. measuring compliance to training or mandatory appointments, etc., and do not even attempt to measure system capacity or workload issues. These were clear messages received in the interviews discussed in Chapter 3 and ironically, acknowledged by some interviewees quoted in Chapter 4, especially in the section entitled "Capacity of the System."

Observation No. 5: The overall Acquisition system incentivizes personnel to not follow existing processes and go around it. Some of the evidence in this regard is the proliferation of new programs, prototypes and rapid reaction programs that operate on the fringes of the current system. Further, early studies are often not funded enough to fully understand and address new concepts or technologies, and program development timelines remain unrealistic and are likely very optimistic and assume perfect execution of all aspects of the system. Interviewees from the acquisition portion of the system saw some of this in the instability of requirements and priorities they received as reported in Chapter 3. Chapter 4, however, showed this to be a prevailing concept, especially among those working requirement documents. Table 6 in Chapter 4 and the commentary following provides a good snapshot of the resulting manifestations of these behaviors.

Observation No. 6: The conflict oriented nature of the resource allocation process is a liability to acquisition program success. Too often the PEM is caught between competing interests year after year re-justifying investments in programs that were previously "committed" when reaching Milestone B and passing that "investment decision." "Budget drills" and other what-if exercises distract strapped acquisition personnel further from doing their primary jobs. Interviewees in Chapter 3 noted this issue probably more than any other and Table 5 in Chapter 4 and the ensuing discussion elaborates on this observation further.

Observation No. 7: While programs are being debated and traded in resource allocation processes individually, there is a surprising lack of understanding regarding the interdependencies

between programs and the ramifications to other programs during these debates. Where this information is known, it often must rely upon the corporate or institutional knowledge possessed by the personnel working these issues. When personnel changes occur, this knowledge is liable to be lost. The overall complexity of the resulting system and its operation is costly. This observation was alluded to in the discussion in Chapter 3, but was much more explicitly address in the interviews analyzed in Chapter 4. Table 5 and the ensuing discussion goes into great depth about the problems relating to interdependencies.

Observation No. 8: Decision avoidance is preferred across the overall acquisition system. Occasionally, hard decisions are wrung out in some of the resource allocation deliberations, but usually it is much easier to defer a decision, often under the guise of preserving flexibility. This is for all decision points, not just those that may result in program cancellation. This behavior results in a system working beyond its operating capacity, struggling to deliver each and every program it is working on. Some of these observations were distilled from Chapter 3's discussion about commanders not really being empowered to do what they needed to do, but rather used their time to "influence" and "shape" activities. This was further characterized during the discussion of the capabilities and limitations of acquisition portfolio managers. Chapter 4 is more explicit in this regard. Please see Table 5 and the accompanying discussion on this topic.

Observation No. 9: The amount of documentation required by the overall system is staggering and can be the driving force behind program delays. For instance, the process by which documents are drafted and approved takes an inordinate amount of time doing so. The existence of documentation that documents what other documents have required is an example of a process wallowing in bureaucracy. This observation was distilled from the section in Chapter 4 entitled "Other issues." Discussions in this section about the "Timelines of the System," "Coordination," "Accountability and Power," and "Process Quality and Precision" all contributed to this observation.

Observation No. 10: The development methodology for the model was a clever way to translate some of the problems reported during the interviews and represents a great contribution to understanding the acquisition system. Most of the interviewees were not able to give an exact or definite description of the amount of time or effort required to do their jobs. However, they could all give a range of time as well as a percentage associated with decision points. These time distributions and probabilities lend itself well to a discrete event model, versus perhaps a system dynamics model. While a system dynamics model has many perceived advantages, it would be very difficult to validate simply from the standpoint that system dynamics is not easily or inherently understood. In the case of this model, people were comfortable talking about what they did and were equally comfortable as the model was being validated by them. The simulation and the results are only based upon what people have shared. Then, these same people, as well as others who had never before been contacted, were able to go and verify the model construct. This observation was distilled from some of the modeling challenges identified in the literature, the interviewees in Chapters 3 and 4, as well as those personnel who helped with the validation of the "free style" model in Chapter 6.

Quantitative Findings

The results obtained by studying the unaltered model and subsequent interventions are very interesting. They provide some insights into the system that otherwise have been the subjects of informed speculation. Many of the qualitative conclusions above have been "tested" or investigated using "interventions" or experimental tests run through the model to see the results. The main conclusions of this effort follow.

Finding No. 1: The fact that an overwhelming number of projects actually circumvent portions of the traditional acquisition system is absolutely extraordinary, especially in context of traditionally recognized new product development best practices and their associated processes. The ramifications

of this finding include an acquisition system with more to do than it has the resources to accomplish. This finding is demonstrated in Figure 48.

Finding No. 2: The greatest expected improvement possible in the model was around 20% improvement to the mean program during and that only after combining ALL potential interventions. This improvement statistic likely represents the lower bound of any possible outcomes of any chosen intervention due to the underlying assumptions present in the model, as discussed earlier. If a 20% improvement, like that seen in Table 47, is not judged to be an adequate amount of improvement to the overall system, then other acquisition alternatives may need to be considered.

Finding No. 3: The most improvement that a single intervention can make on the system is around a 9% decrease to the average duration of a program to Milestone C per Table 32. This particular intervention speaks to the authority and accountability of Acquisition leaders. Increasing these authorities, so that stopping a program outright at particular milestones rather than allowing them to continue becomes more commonplace, is a realistic interpretation of this intervention. The actual implementation of such an intervention would require changes to policy and approval to fold funding for such efforts back into existing programs rather than having them reallocated for another new program and may not be very realistic to pursue in any political environment.

Finding No. 4: The most effective interventions are those that address the "quality" of system processes by attacking sources of variability in the system. Improving Systems Engineering processes and reducing technical and funding uncertainties cause programs to execute less randomly. These findings were demonstrated by the model and reported on in Tables 31, 34, 41, 42, 44, and 46.

Finding No. 5: The sheer complexity of the system complicates the testing and measurement of proposed interventions. Real world interventions are complicated in that years must transpire before steady-state results relating to that intervention are seen. Unfortunately, many multiple interventions are injected into the system before the efficacy, or lack thereof, of the original intervention is known.

Using a model such as this one allows for differing interventions to be tested in isolation. This represents another key contribution of this work.

Finding No. 6: The top interventions, across any measure, are all combinations of differing interventions as seen in Tables 41 through 47. Some of these interventions may not have any noticeable individual effect, but together, they do make an impact. This suggests that incremental continuous improvement has not exhausted all options or reached any limits, although the evidence may suggest that these incremental improvements are becoming more costly as the "low hanging fruit" has already been implemented.

Finding No. 7: It is possible to take purely subjective data and, when organized correctly, produce quantitative results and allow for experimentation. This finding is closely aligned with Observation No. 10 as it provided the foundation for the quantitative exploration of this subject.

Overarching Conclusions

Conclusion No. 1: What should the overall acquisition system value? Some might argue the answer to this question is cost, schedule, and performance. However, these do not appear to be the things that are really valued by the system. During the course of this study, the following characteristics stand out: flexibility, transparency, and quality. If flexibility is valued, e.g. being able to start programs at will, rush things through, jump ahead of other programs in development cycle, then the system must be able to deal with the funding instability that ensues. If transparency is valued, e.g. process checking, error-proofing, consensus-building, then the system must maintain process reviews and levels of approval and accept expensive use of calendar time. If quality is valued, e.g. not giving relief for technical requirements, capabilities and performance expectations, then expect program delays and cost increases to develop and mature the necessary technologies, or deliver the expected capabilities, etc. Given that all of these "outcomes" are present, a fair conclusion to draw is that the system places its value upon flexibility, transparency, and quality or performance of programs that go through the

process. These outcomes, however, are diametrically opposed to the stated values of minimizing cost and schedule and delivering an acceptable amount of "performance."

Restated, there are five key characteristics the Acquisition System values: cost, schedule, performance, transparency, and flexibility. For any program, pick three at the expense of two, and remember transparency, flexibility, and performance are almost always non-negotiable.

Conclusion No. 2: In general, the people working within the process are hard working and dedicated personnel, and their interests are often well aligned with those of the nation. By and large, they are absolutely committed to doing the right thing and know their particular jobs well. Similarly, the idea that problems in the acquisition system are the problem of acquisition alone is not correct. These problems are the result of emergent behaviors of the overall Acquisition system. Indeed, all of the evidence gathered and presented in this work suggests it is a systems problem.

Conclusion No. 3: No silver bullet exists that will fix the acquisition system. Rather, the extraordinary complexity of the current system makes it difficult to develop and test interventions that will result in outcomes aligned with the original intention. Furthermore, the time required for the effect of a particular intervention to be manifest is usually on the order of several years, far outside the longevity of most policymaker's tenure. This allows the system to be frequently criticized, interventions made to demonstrate the ability of policymakers and politicians to "do something" about acquisition, and relieve those responsible of any unintended consequences from being held accountable for their actions. Thus, the system is constantly being adjusted chasing the never-ending goal of acquisition reform. A corollary to this might be that the silver bullet mindset exists with some in leadership circles. However, the model shows that multiple interventions will be far more effective than any single intervention or "silver bullet."

Policy Implications and Potential System Improvements

There are many lessons to be learned from the results of this study. As policy is developed and recommended for implementation, more concerted effort needs to be made regarding what potential systemic effects any policy may have on the overall system. A model such as the one developed here may provide insights not otherwise seen and may avert costly mistakes. The complexity of today's existing system demands greater fidelity and confidence in the viability and efficacy of new and/or changed policies. This work suggests that current efforts to measure the effects of policy interventions, process changes and other changes are falling short of its goal.

Research results suggest continuing improvements to the existing system still works, although the evidence also suggests that the impact of continuous improvement is beginning to show diminishing returns. Is it time to suggest dramatic and wholesale changes to the Acquisition system? Does the entire system need to be scrapped and rebuilt from scratch? The next time a blue-ribbon panel is commissioned to study or recommend improvements to the Acquisition system; these questions should be addressed early and up front.

Until that time, given that the Acquisition system values five characteristics instead of the three valued by program managers and taxpayers alike, efforts should be made to define and measure these other two characteristics. For instance, one way to add value to the notion of transparency, is to have records that reflect what really happens. As noted in Chapter 6 on verification and validation, one of the more frustrating portions of this research was finding enough valid data to use in this research. It simply does not exist and often, when it does, there is enough conflicting information to destroy all confidence in the fidelity of the data. More "honest signals" are needed that cannot be faked, fudged, or manipulated that also has a meaning to the "other side," whether they are the taxpayer, the war fighter or any other customer. If records and recordkeeping were improved, there would be a better

understanding of the true costs of system development, as well as an improved ability to assess the efficacy of any intervention made to the system.

Other improvements to the system that affect transparency would be to streamline the approval and accountability functions within the DOD. There are far too many organizations and approval bodies that a program must navigate through or get permission from. The cost of doing business this way is very time-consuming and distracts from the development of the program. However, a change like this would also work against the system's desire for transparency, e.g. the consensus building, the desire for openness. A carefully defined balance would need to be struck between the competing desires of transparency and keeping to a shorter schedule.

Similarly, most ways that would improve flexibility, such as finding ways to start new programs or remove the "colors of money" that constrain the ability of personnel to do their jobs, comes at the expense of transparency. Furthermore, compelling arguments exist to restrict flexibility to start new programs or to make wholesale changes to the plans of current systems in development, e.g. such as the potential of overloading or losing control of the capacity of the system.

The author, however, recommends that the principles of personal integrity, personal accountability, and development speed be re-enthroned as values into systems development. The organizational stovepipes between JCIDS, PPBE, and acquisition should be removed and an organization built from a systems perspective should emerge. Operations such as combat operations, etc., should not be allowed to touch money allocated for system development and services ought to compete for the right to deliver the capabilities the war fighter wants. If the portfolio model is used, and the author's opinion is that product portfolio management is still one of the best system development practices around, leaders of those portfolios should be given complete authority and responsibility for those programs within their portfolio. "Colors of Money" ought to be eliminated or severely curtailed if it prevents a portfolio leader from getting their job done. Duplicative staffing functions at Headquarters

should be eliminated and personnel be pushed out to the various development centers. Headquarters should accept the responsibility of working the interrelationship issues between programs. Finally, the integration of the different service's acquisition systems ought to be pursued. Just as the Goldwater-Nichols act made the services "fight" from a joint perspective, the establishment of a joint acquisition system would fundamentally change the way the system "equips" its soldiers, sailors, and airmen. Clear priorities could be established and promulgated from a joint war fighter's perspective, something that is lacking today. Such wholesale changes would require several statutory changes to allow this to occur and may be politically too sensitive at this time to accomplish. Nevertheless, the introduction of an integrated acquisition system, with true authorities and responsibilities for the development of portfolios of capability would address many of the causal factors alluded to in this work of research and be a historic and positive step forward in the troubled saga of DOD systems development.

Future work

Generally speaking, all of these conclusions need additional work. The results of this model simply suggest areas where closer looks could be made based upon experience, the intuition of others, and the preliminary analysis of some of the interventions that were tested. The results presented here will guide subsequent work by helping establish a hierarchy of importance of potential areas that would be well-suited for further investigation.

Future Work Area No. 1: Identify and develop enterprise risk measures. One such measure might be based upon comparing an existing program's attributes to the model and "projecting" or propagating the model forward to establish a program's possible distribution at completion. This could easily lead to measures comparable to the nominal baseline at certain confidence levels.

Future Work Area No. 2: Are there other attributes of a program that affect its behavior while going through the system? For instance, the model could be adapted to key off of Technology Readiness Levels or the "novelty" vs. cost or complexity of the program.

Future Work Area No. 3: Are there other reasons why programs seek to circumvent portions of the overall system? For instance, what is the dollar value of a system that goes around the traditional acquisition process versus one that doesn't? This can be looked at in terms of actual expenditures as well as projected costs from the beginning of a program.

Future Work Area No. 4: Add cost data to the model, both in terms of the actual program, but also the "costs" of individual process steps and decision points.

Future Work Area No. 5: Add a more explicit modeling of the PPBE to this model. Explore if such a model is more appropriate in demonstrating systems behaviors.

Future Work Area No. 6: Explore why certain interventions, such as funding stability, technical uncertainty, test trades, and other individual SE reviews did not have a greater impact on program outcomes vs. the baseline case. Certain results were not expected and pursuing research in this area would help determine why this was the case and if it is a correct representation of reality.

Future Work Area No. 7: Other things like adding more fidelity to the model and the model construction to provide a better understanding of interactions, as well as attempting to extend this model into a model of the enterprise where multiple systems in development were able to coexist and how their interactions would drive and affect one another. This would require additional definition and coding methods to reflect the interactive interrelationships and influences that occur between multiple projects.

Future Work Area No. 8: Add or address the sustainment activities that occur in the overall system. As the research noted, a significant amount of activity goes directly from the very early stages of the Acquisition system into the sustainment portion of system, currently run by acquisition personnel.

Future Work Area No. 9: Add or address non-programs of record to the model's analysis. These are programs that are so small in terms of dollar-size, development time, and quantity that they are not subject to the same amount of scrutiny as other programs, particularly from a financial perspective.

Nevertheless, the quantity of these programs easily dwarfs the total number of ACAT programs by orders of magnitude.

Recommendations

Improving the overall acquisition system outcomes will require a concerted effort on the part of lawmakers and policymakers to clearly define what attributes of the acquisition system are valued and build a system around that. The results of this work suggest some areas for additional scrutiny. For instance, as already noted, multiple interventions are required for significant cycle time improvements. Does this make a compelling case for a "clean sheet" process redevelopment?

Leaders should ensure individual process steps truly add value or have a compelling purpose versus the cost and resources required by all of these individual system pieces. Eliminating unnecessary or duplicative processes and decisions will reduce program development time and cost.

Strengthen acquisition swim lane capability to say "no" or terminate programs; delegate and/or establish true portfolio authorities and capabilities. For initial quality improvements, focus on delivering funding stability, e.g. fully fund programs, and minimize financial turbulence.

Finally, place a premium on technical excellence and high standards for personnel from the very beginnings of the system.

Summary

This research has systematically examined the acquisition system used by the United States Air Force. A systems approach was used to investigate the three major systems in acquisition which comprise the overall acquisition system. It was hypothesized that taking such an approach would shed new insights into the overall behavior of the acquisition system and land additional explanation to the negative outcomes experienced by the vast majority of acquisition systems today. The merit of this approach has been validated.

Through a series of qualitative studies, and the subsequent development of a quantitative simulation model, some emergent behaviors and performance of the acquisition system in use today are better understood. The success of the system in developing and fielding systems for the Armed Forces of the United States is remarkable and speaks to the dedication and hard work of countless individuals, sometimes working in very difficult environments due to the emergent and unanticipated attributes of the acquisition system.

The tools and methodology used in this study are well suited for adaptation and modification to other complex socio-technological systems in order to study, better understand and identify emergent behaviors and system outcomes.

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Appendix A – Other Studies and Recommendations to Improve Acquisition Outcomes

This appendix contains a brief analysis and overview of the literature identifying factors contributing to schedule and cost growth from an Enterprise perspective. During the course of this effort, a total of forty-three documents were identified as having great potential to identify general themes and trends. The search topics used to find these documents were “Acquisition Schedule,” “Schedule growth,” and “Cost growth.” There were three primary sources that were searched. First, the RAND website was visited and reviewed. Second, the IDA website yielded several candidates. Third, the GAO website was visited and searched for relevant documents. Fourth, the Defense Technical Information Center (DTIC) Technical Document website was searched. This site contains most of the reports from the three previous websites, including many historical (archived) documents no longer available at the three other websites, any contracted technical study done by any DOD entity, theses and dissertations from all military professional and graduate schools, as well as studies and theses written by military personnel attending school full-time at civilian institutions.

The documents represent a range of qualitative studies through quantitative predictive studies. All noted issues with sample size and data reliability, but several unifying themes are evident. Of the forty-three documents identified, only thirty-one source documents were ultimately reviewed. Twelve other documents were deemed “not relevant” to the topic at hand. A subset of the reviewed documents was actually pertinent to the intent of this exercise and will be discussed here.

Key Takeaways

Among the key takeaways for Enterprise performance: Since the 1950s, cost growth of weapon systems has averaged around 40%. Annual cost growth was significantly affected by the Packard Reforms around 1969. This reflects systemic behavior of the overall system.

Among the key takeaways for schedule: cost and schedule are coupled; the longer the program, the more likely the chance a schedule slips; shorter programs get done sooner. "Decisions" are the source of most schedule slips.

Takeaways regarding cost issues in acquisition: among the root causes are "decisions" that are made. Other factors may include political party influence on DOD behavior, e.g. well outside the realm of control for programs. Other significant factors include over-optimistic estimates of program cost, contractor turbulence at lower levels, etc.

Finally, from an enterprise perspective, the portfolio of programs is growing at a rate faster than the budget and will soon be unsustainable.

Additional details and more detailed examples follow below, but the key takeaway is this: there are many, many things that contribute to schedule and cost growth and some of the most relevant are those that are systemic and cross-process within the Air Force.

Discussion of Individual Studies

A RAND study published in 2006, titled, "Measuring the Statutory and Regulatory Constraints on DOD Acquisition: Research Design for an Empirical Study" [129], looked at the problems with the cost of compliance of rules and regulations on the acquisition system. They could not find any "hard" evidence, but felt that these rules and regulations did impose "costs" on the programs. The five areas deemed most burdensome were the "Clinger-Cohen Act, the Core law, the 50-50 Rule, program status reporting, program planning and budgeting, technical data, and testing."

Another Rand study, titled "An Analysis of Weapon System Cost Growth" [130], found that the acquisition system can't explain all of the problems.

> "We have not yet fully examined an important set of potential explanatory variables – institutional and incentive structure factors – that may be fundamental drivers of cost growth…The inability of any single factor to explain large portions of observed cost has important policy implications. It suggests that any policy solution of necessity will be complex, incorporating all aspects of the acquisition process and requiring changes in behavior in all

> responsible parties, from the system program office through Congress. Further, inflation is notoriously difficult to estimate accurately, and quantity changes may be necessary because of changes in the budget environment or threat – factors well beyond the control of program management. Additionally, the very large uncertainty inherent in developing advanced system suggests that cost risk never can be removed completely." (Pg xiv)

RAND, in a study titled, "Measuring the Statutory and Regulatory Constraints on Department of Defense Acquisition" [131], looked at the time devoted to different issues at the program office level in this study. They could not find any area where a policy change would save significant dollars or reduce program cycle times. However, one outcome of this study was the recognition that the PPBE dominated most of the programs' expression of time, which was then followed by cost, schedule, and performance reporting data (CSP) (pg 20). In the PPBE area, the largest identified activity was recorded on de-scoping a portion of the program to pay for a funding shortfall elsewhere, followed by "funding drills". "What-if" exercises required the second highest level of effort in the PPBE area. However, the activity of budgeting was the largest area (accounting for 68% of the time in PPBE) in a general category of "other" (pgs 26-28).

While examining CSP functions, RAND noted that the reporting activity required the second highest level of effort. Some of the more time consuming tasks included monthly acquisition reports, smart charts, etc. (pg 29).

Additionally, there were periods of time where the focus of the program staff was confined to a limited set of activities, cutting across statutory areas, related to a specific event, statute or regulation, or reporting activity. (pg 44)

In terms of actual impacts to program schedule and cost, only one instance was documented, and this impact came from outside of the acquisition system: the problem of getting more money than was requested. It caused a complete restructuring of the program. It took nine months for the funding profile change, seven months for the color-of-money change, and six months to complete the additional testing (pg 54).

A study of Navy contracts over a twenty-year period found little variation in the cost growth outcomes of ACAT I, II, or III programs [132]. It did note that the portfolio age of programs has increased significantly. It noted also from other studies that programs that finish "early" or "late" tend to have more cost growth than those that finish "on time" and that development time is correlated with cost, where a $1 million cost increase is associated with a 1.7 month increase in development time.

An AFIT thesis on the Cost and Schedule growth for Military Space Systems [133] found that cost growth was associated with type and program size, where schedule growth was associated with program "volatility," e.g. the number of changes to the original estimate, technical problems, and design changes. Further, it reports that modification programs experience lower average total cost and lower cost growth (pg 32). Further, the length of the R&D phase or the length of the Production phase are good indicators of the likelihood and amount of cost growth (pg 34). The thesis also reported on another study where cost and schedule growth are higher for programs that are initiated during times when the Democratic party has a strong majority in Congress, but that a Democratic president correlates with reduced cost overruns for that year. However, another study found that the same political party controlling both houses of congress or control of the Senate and Presidency correlates with increase cost overruns for that year (pg 35). Still another study found that external guidance such as oversight reviews, legislation, and other directives are associated with higher schedule growth (pg 35).

> "Interestingly, for cost growth, the qualitative studies and the quantitative studies differ on the factors they considered and thus differ on which factors they find contribute most to cost growth. The most likely cause of this disconnect is that quantitative studies often limit their predictor variables to those available in the SAR, and many of the factors considered in qualitative studies are unlikely to be available for the large number of programs considered by quantitative studies." Pg 45

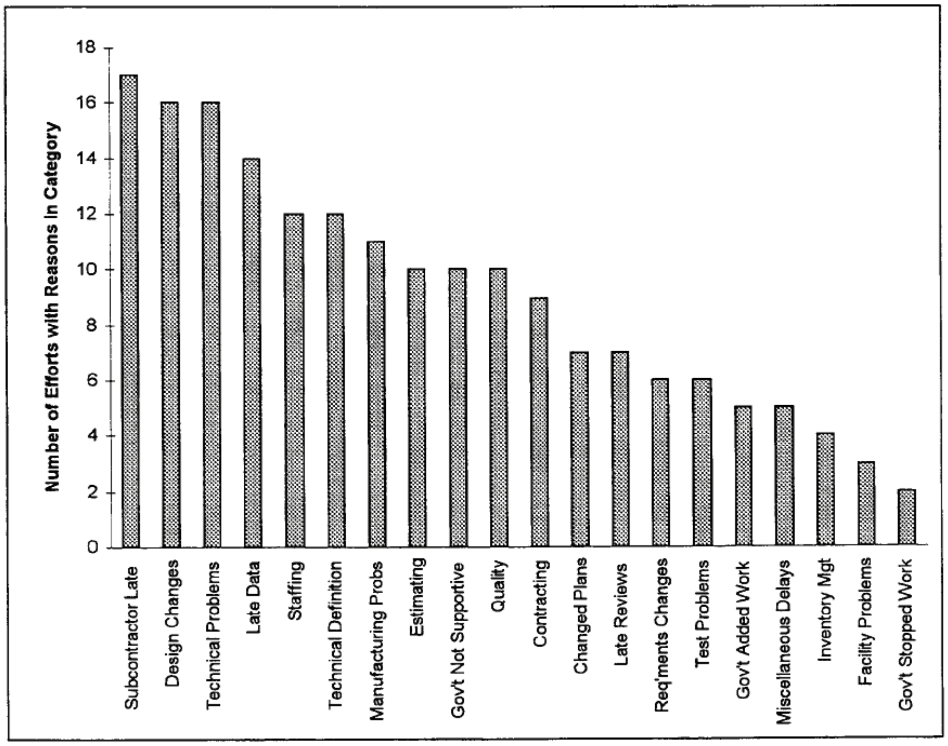
An AFIT thesis titled "Cost growth in weapons systems: re-examining rubber baselines and economic factors," published in 2007 [134], found that "the number of rebaselines for an MDAP does

predict schedule growth and two or more rebaselines predicts cost growth" (pg 7). The thesis also found that technical maturity and contract length are linked because the DOD "appeared to be preoccupied with new technology regardless of the cost" (pg 10).

> "Only two of the independent variables used to analyze the occurrence of cost overruns proved to be statistically significant. These two variables were the number of rebaselines and the length of the contract. However, both variables were statistically significant to the one percent level, indicating a very powerful positive influence on the likelihood of an overrun occurring. As such, contract budget instability and extending the length of a contract both add to the likelihood of a contract experiencing a cost overrun. Each time a contract is rebaselined it is two percent more likely to experience a cost overrun while an additional year in program length adds 3.6 percent to the likelihood of a cost overrun." (Pg 26)

The AFIT thesis, titled "Analysis of Cost and Schedule growth on sole source and competitive AF contracts," published in 1993 [135], found that sole source contracts exhibited an average of 57% higher cost growth in all areas and that schedule growth was over four times greater than the schedule growth of competed contracts.

The AFIT thesis titled "Why schedules slip: Actual reasons for Schedule Problems Across Large Air Force System Development Projects," published in 1995 [136], contained some interesting results. The thesis is based on a sample of twenty-two large EMD programs from 1981 to 1994. It excludes R&D programs and is a descriptive study only. Furthermore, it only reviews efforts managed at ESC. The thesis identified 549 reasons for schedule difficulties. The source of this data came from contractor generated Cost Performance Reports. The "Seven Categories (technical problems, late subcontractors, manufacturing problems, design changes, late data, contracting, and staffing) accounted for 49 percent of the frequency, 57 percent of the schedule variance (in dollars), and 49 percent of the schedule variance (in work days)" (Pg viii).



[136]

Figure 52: Depiction of categories why schedules slip across development efforts

Top Five Categories (Rank Ordered)		
Frequency	Total Schedule Variance ($)	Total Schedule Variance (Work Days)
Technical Problems Subcontractor Late Late Data Manufacturing Probs Staffing	Technical Problems Subcontractor Late Design Changes Manufacturing Probs Contracting	Subcontractor Late Manufacturing Probs Technical Problems Contracting Design Changes
Bottom Five Categories (Rank Ordered)		
Frequency	Total Schedule Variance ($)	Total Schedule Variance (Work Days)
Miscellaneous Delays Inventory Mgt Req'ments Changes Gov't Stopped Work Facility Problems	Late Reviews Gov't Added Work Req'ments Changes Gov't Stopped Work Facility Problems	Miscellaneous Delays Inventory Mgt Changed Plans Req'ments Changes Facility Problems

[136]

Table 50: Most and Least Significant Categories of Reasons for Schedule Problems

> “The seven categories listed [above] comprising the ‘top five,’ or most significant, categories of reasons for schedule problems account for 49 percent of the observed reasons (frequency), 57 percent of the schedule variance (in dollars), and 49 percent of the schedule variance (in work days). Clearly, these categories represent reasons more deserving of management attention than the eight categories listed in [the table above] comprising the ‘bottom five,’ or least significant, categories of reasons for schedule problems, which account for only 7 percent of the observed reasons (frequency), 2 percent of the schedule variance (in dollars), and 8 percent of the schedule variance (in days).” (Pg 73)

An AFIT thesis, published in 2006, titled “How does the political nature of the defense acquisition process affect cost growth?” [137], found similar results as reported earlier about the Congress and Presidency. It also found “that the dispersion of defense manufacturing capacity across the county inflates cost overruns in DOD programs.” The thesis’ literature review identified another study that indicated three sources of cost growth are: advanced technology, design stability, and schedule risk (Pg 26).

A Naval Postgraduate School thesis, “Cost and Schedule Growth during weapon system acquisition, impact of selected economic and political factors,” published in 1990 [138], found some interesting results regarding political influence on the system.

> “According to the results, Democratic congressional majorities, not Republican, are associated with increased cost and schedule growth…This result cannot be easily explained. One possible explanation is that when Democrats hold the majority in Congress, they are able to reduce appropriations for established programs, leading to program stretch out, which Tyson, et al., found to be directly related to cost and schedule growth.” (Pg 53)

> “Nonetheless, these results do suggest that programs initiated under both Democratically dominated Congresses and Democratic Presidential administrations have been characterized by greater cost and schedule growth…Weapon system cost growth appears to be much more strongly related to the influence of political and economic factors than is schedule growth.” (Pg 55)

“This suggests that schedule growth is a by-product of cost growth” (Pg 56).

An AFIT Thesis, titled “Relating initial budget to program growth” and published in 2001 [139], used Weibull and Rayleigh distributions to model cost growth. “This model explains 50.5% of the variation in schedule growth for the 36 included programs” (Pg 3-35).

> "Belcher and Dukovich identified 12 factors in three areas contributing to development program cost growth and schedule growth. (See Figure 2-7). Our cost and schedule models each account for only a single of Belcher and Dukovich's factors, funding constraints. Yet, these models explain 53.4% of the variation in cost growth and 50.5% of the variation in schedule growth." (Pg 3-39)

"…we observe from the validation results that both the cost model and schedule model tend to underestimate program growth" (Pg 4-1).

An IDA Report, titled "Understanding cost and Schedule Growth in Acquisition Programs," was published in 1994 [140]. It indicates that the keys to preventing schedule growth in development are technical realism and willingness to make tradeoffs. The report examined twenty programs. "The major determinant of development schedule growth was increase in quantity – the need to produce more items for testing than planned" (Pg S-6). "The programs with high total program cost growth, by contrast, were characterized by stretched production schedules" (Pg III-32).

The 1994 Rand report, titled "An Analysis of Weapon System Cost Growth" [130] indicated that the two factors with greatest effect on total program cost growth are program size and maturity. "We have not yet fully examined an important set of potential explanatory variables – institutional and incentive structure factors – that may be fundamental drivers of cost growth" (Pg xiv).

> "The inability of any single factor to explain large portions of observed cost has important policy implications. It suggests that any policy solution of necessity will be complex, incorporating all aspects of the acquisition process and requiring changes in behavior in all responsible parties, from the system program office through Congress. Further, inflation is notoriously difficult to estimate accurately, and quantity changes may be necessary because of changes in the budget environment or threat – factors well beyond the control of program management. Additionally, the very large uncertainty inherent in developing advanced system suggests that cost risk never can be removed completely." (Pg xiv)

"In times of increasing budgets cost growth also increases, while decreasing budgets are associated with declining cost growth ratios" (Pg 46). "…the only schedule variable significantly correlated with cost growth is actual program duration…" (Pg 46).

“A Quantitative Analysis of Factors Affecting Weapon System Cost Growth,” a NPS Thesis published in 1987 [141], looked at nine weapon systems from the Army and Navy using Selected Acquisition Reporting (SAR) data.

> “Each cost variance was classified as to whether it was attributable to a mistake in the cost estimating process or a post-Milestone II decision…Cost growth due to decisions outweigh mistakes by a factor of 2.3 to 1. A majority of the mistake cost growth is due to errors in the estimation of production costs. A majority of the decision cost growth is due to schedule slippage. Low cost systems have 2.4 times as much mistake cost growth as high cost systems.” (Pg ii)
>
> “Mistakes made in the estimation of system costs make up 30.6% of the total cost growth of a system while decisions make up 69.4% of the total cost growth…A majority of the decision cost growth is attributable to schedule slippage. Some of this schedule slippage can be attributed to decisions to change the design and performance requirements of the system, while the remaining amount is unexplained.” (Pg xi)
>
> “A majority of the decision cost growth occurs in the Dsmmi category. The Dsmmi category is used to classify cost variances attributable to a decision to change the procurement schedule, shifts in the multi-year procurement rates or in different management initiatives. A detailed analysis of the data indicates that a majority of the Dsmmi cost growth is due to schedule slippage. Some of this schedule slippage can be attributed to decisions to change the design and performance requirements of the system.” (Pg 40)

The 1991 AFIT thesis, “Estimating potential cost growth of the most probable cost estimate,” [142] determined that three factors were “major contributors to cost growth for ASD programs; technical risk, configuration stability, and schedule risk” (Pg vii). Sixteen programs were examined covering a time span from 1980 to 1988.

An interesting ICAF Thesis, published in 1993 and titled “Cost Growth in DOD Major Progams: A Historical Perspective,” [143] suggested five factors existed for cost growth: requirements definition, cost estimating, program management, contracting, and budgetary issues. Additionally, the literature review suggested these “…factors significantly affect cost growth in major systems. Their results identified three factors at the 95% confidence level: growth in the development schedule; decisions to “stretch out” programs; and the length of the development schedule” (Pg 21). However, Bliss authored a study which directly contradicted the results from the IDA study referenced above stating that

program size and type of system were the most significant, while technical challenge, slips in EMD, and program stretch were NOT significant (Pg 22).

The GAO report, titled, “Defense Acquisitions: Better Weapon Program outcomes require discipline, accountability, and fundamental changes in the acquisition environment” [144], found the following:

> “DOD’s portfolio of weapon system programs has grown at a pace that far exceeds available resources. From 1992 to 2007, the estimated acquisition costs remaining for major weapons programs increased almost 120 percent, while the annual funding provided for these programs only increased 57 percent. Current programs are experiencing, on average, a 21-month delay in delivering initial capabilities to the warfighter—often forcing DOD to spend additional funds on maintaining legacy systems.” (Abstract)

> “Several underlying systemic problems at the strategic level and at the program level continue to contribute to poor weapon system program outcomes. At the strategic level, DOD does not prioritize weapon system investments and the department’s processes for matching warfighter needs with resources are fragmented and broken. Furthermore, the requirements and acquisition processes are not agile enough to support programs that can meet current operational requirements. At the program level, programs are started without knowing what resources will truly be needed and are managed with lower levels of product knowledge at critical junctures than expected under best practices standards. In the absence of such knowledge, managers rely heavily on assumptions about system requirements, technology, and design maturity, which are consistently too optimistic. This exposes programs to significant and unnecessary technology, design, and production risks, and ultimately damaging cost growth and schedule delays. DOD officials are rarely held accountable for these poor outcomes and the acquisition environment does not provide the appropriate incentives for contractors to stay within cost and schedule targets, making them a strong enabler of the status quo.” (Pg 2)

Figure 1 in this report is recommended as it builds a strong case about forthcoming problems. It shows the re-emergence of the “Bow Wave,” a huge amount of funding requirements lying just “outside” of the official budgeting cycle (Pg 4). Furthermore, “Poor program execution contributes to and flows from shortfalls in DOD’s requirements and resource allocation processes” (Pg 6).

> “Over the past several years our work has highlighted a number of underlying systemic causes for cost growth and schedule delays both at the strategic and at the program level. At the strategic level, DOD’s processes for identifying warfighter needs, allocating resources, and developing and procuring weapon systems—which together define DOD’s overall weapon system investment strategy—are fragmented and broken. At the program level, the military services propose and DOD approves programs without adequate knowledge about requirements and the resources needed to successfully execute the program within cost,

schedule, and performance targets. In addition, DOD officials are rarely held accountable for poor decisions or poor program outcomes.” (Pg 6)

> “Ultimately, the process produces more demand for new programs than available resources can support. This imbalance promotes an unhealthy competition for funds that encourages programs to pursue overly ambitious capabilities, develop unrealistically low cost estimates and optimistic schedules, and to suppress bad news. Similarly, DOD’s funding process does not produce an accurate picture of the department’s future resource needs for individual programs—in large part because it allows programs to go forward with unreliable cost estimates and lengthy development cycles—not a sound basis for allocating resources and ensuring program stability. Invariably, DOD and the Congress end up continually shifting funds to and from programs—undermining well-performing programs to pay for poorly performing ones.” (Pg 6)

> “Constraining development cycles would make it easier to more accurately estimate costs, and as a result, predict the future funding needs and effectively allocate resources. We have consistently emphasized the need for DOD’s weapon programs to establish shorter development cycles. DOD’s conventional acquisition process often requires as many as 10 or 15 years to get from program start to production. Such lengthy cycle times promote program funding instability—especially when considering DOD’s tendency to change requirements and funding as well as frequent changes in leadership. Constraining cycle times to 5 or 6 years would force programs to conduct more detailed systems engineering analyses, lend itself to fully funding programs to completion, and thereby increase the likelihood that their requirements can be met within established time frames and available resources.” (Pg 9)

There is also a very nice appendix documenting many of the recent changes in law aimed at acquisition (Pg 14).

Impossible Certainty: Cost Analysis in Weapon System Acquisition, is a RAND report published in 2006 [40] reviewing how cost analysis is done in acquisition programs of the DOD.

> “RAND conducted research that explored and reviewed various risk assessment methodologies that could be applied to cost estimating for major acquisition programs. RAND explored how these risk methods and policies relate to a total portfolio of programs. The research also explored how risk information can be communicated clearly to senior decisionmakers.” (Pg xx)

RAND documents some of the challenges faced during the cost analysis phase. “All of this leads to a reluctance on the part of acquisition program managers and analysts to pursue any kind of risk analysis for their cost estimates; in the absence of guidance, almost any choice can be criticized on technical grounds by someone who does not like the answer” (Pg 14).

> “Proponents of qualitative assessment assert that trying for more-precise quantification of probability and cost increase is meaningless in the face of substantial uncertainty. However, the

qualitative methods are not as useful in aggregating lower-level risks to projectwide risk assessments, because it is not clear how to combine such broad ranges of probability and cost increase into a final, single qualitative risk assessment. In particular, since one major output of a cost risk analysis is to set the budget for a project, quantitative methods are more appropriate. Qualitative methods, however, can be valuable for providing a better understanding of individual risks and for developing a risk mitigation plan." (Pg 43)

RAND does a nice job reviewing five different probabilistic methods used in cost estimating. "Here we review five probabilistic methods: propagation of errors, expert judgment, error of estimating method, method of moments, and Monte Carlo simulation" (Pg 51).

"The most often mentioned sources of program risk by decisionmakers were the following: Overall cost of a program getting set before any real analysis of the program risks is performed. A related issue: The constraint on program estimates and funding driven by affordability within the Planning, Programming, and Budgeting System (PPBS) process. Use of OSD-directed inflation rates that do not reflect program contract inflation rates, thereby divorcing known funding requirements from availability of funding. Use of point estimates without including what the range of likely costs could be. Disconnects between requirements/capabilities generation and program management resulting in the acquisition community promising more capability than a program can afford. Failure to investigate critical assumptions made about a program before key decisions. Underestimation of program complexity and schedules, especially when program advocates assert programs under review "won't be like previous programs." Failure to ensure that the test community was "on board" early enough to determine that requirements or capabilities were "testable" at the end of the development process. Faulty program cost estimates at key decision milestones." (Pg 74)

"In summary, the senior acquisition officials generally felt that • Cost growth was due to a large number of causes, some of which were beyond the control of the acquisition community, so realistic risk assessments would not eliminate all cost growth in weapon systems • The current system meets their needs to assess risk (since they are in a position to ask for that kind of analysis) • Prescribing formats for risk presentations might constrain true risk discussions and that risk assessments based on historical analogous program performance was desired (where data allowed) • More flexibility in openly addressing risk funding within the PPBS and congressional legislative processes would allow them to better address risk and decrease program cost growth • Risk assessments should be done on a case-by-case basis, with only guidelines (as opposed to regulations or directives) as to content of the risk assessments and perhaps to a more standardized risk nomenclature." (Pg 79)

RAND suggest there are some risks that are common to programs. These are: Estimating Uncertainty, Economic Business Base, Technology, Schedule, and Other sources of cost risk (Pg 96).

The report also attempts to see if there is value in using portfolio techniques in managing programs. In the section titled, "Risk Management for a Collection of Programs," (pg 135), RAND

assembles a set of hypothetical programs into a portfolio and estimate that approximately 9% of cost could be saved using these methods. However, "These results depend on the following assumptions: The program cost probability distributions are uncorrelated. The estimate confidence levels are accurately assessed. The contractors and program managers have incentives not to spend the reserves. The risk reserves are available to the program when needed" (Pg 138). They concluded that "although there are advantages to managing program cost risk at the "portfolio" level, there are substantial obstacles to doing so within the current Planning, Programming, and Budgeting System framework" (Pg 145).

"Is weapon system cost growth increasing? A Quantitative Assessment of Completed and Ongoing programs" is the title of RAND report MG-588 [145]. "Perhaps the most important finding of the analysis is that development cost growth in the past three decades has remained high, with no significant improvement" (Pg xx).

> "Over the years, several studies, by RAND and others, have attempted to identify the causes of cost growth and what steps can be taken to address them. These causes fall into the following broad areas: overoptimism, estimating errors, unrecognized technical issues, requirements creep, lack of incentives to control cost, and schedule extensions. Therefore, addressing the issue of cost growth requires vigorous involvement of all stakeholders in DOD." (Pg xxi)

"Sources of Weapon System Cost Growth: Analysis of 35 Major Defense Acquisition Programs," is the name of another RAND report, number MG-670, published in 2008 [146]. It attempts to address the larger issue of why cost growth occurs. The report scraps the seven variance categories in the SAR for four major categories: "(1) errors in estimate and planning, (2) decisions by the government, (3) financial matters, and (4) miscellaneous sources" (Pg xiv) with a table of sub-categories.

> "Total (development plus procurement) cost growth is dominated by decisions, which account for more than two-thirds of the growth. Most decision-related cost growth involves quantity changes (22 percent), requirements growth (13 percent), and schedule changes (9 percent). Cost estimation (10 percent) is the only large contributor in the errors category. Growth due to financial and miscellaneous causes is less than 4 percent of the overall growth." (Pg xvi)

> "Decisions accounted for the majority of cost growth in aircraft and helicopters and missiles, and for virtually all of the cost growth in electronics. Cost estimating was the single largest cost

> growth contributor in aircraft and helicopters and missile programs at 27 percent and 15 percent, respectively. Quantity, at 18 percent, was the single largest contributor to cost growth in electronics programs." (Pg xviii)

"Our results show that decisions involving changes in requirements, quantities, and production schedules dominate cost growth. Therefore, program managers, service leadership, and Congress should look for ways to reduce changes in these areas" (Pg xix).

In the RAND report TR-343, "Historical Cost Growth of Completed Weapon System Programs," published in 2006 [147], it reports on the results of three other studies that suggest schedule growth is correlated with cost growth (Pg 15).

Summary and Conclusions

In conclusion, the literature is full of reports and studies that have attempted to quantify both quantitatively and qualitatively reasons why weapon system cost and schedule growth occur. Unwittingly, the distilled essence of these materials lends support to the approach and conclusions of this dissertation research. The problems are systemic in nature and there are no easy fixes or answers.

Appendix B – Sample Questions used in Acquisition Study

Questions for Portfolio Managers
Emphasize that this is about their job as a portfolio manager (describe a "portfolio" if needed). There is no right or wrong answer. This interview is exploratory in nature and is designed to learn more about portfolios, the job of being a portfolio manager, and associated items.

Note:
Questions 1-11 are survey type questions that can be gathered at a later time
Questions 17-19 are key questions that should be asked in all interviews

About the Portfolio Manager

1. What is the name of your portfolio?
2. How long have you been in this position?
3. What kind of training is required for this position?
4. What is your professional background?
5. What are your duties as a portfolio manager?
6. What other duties do you have in addition to those of a portfolio manager?

About the portfolio

7. How many programs make up your portfolio?
8. How many people directly report to you?
9. How many people are you responsible for?
10. What is the overall dollar size of your programs?
11. What are the ACAT levels of your programs?

Portfolio Strategy

12. Does your portfolio have an overarching strategy or vision?
    a. What is it?
    b. How do you measure progress towards reaching the portfolio vision or strategy?
        i. What are the criteria used?
13. What is the strategic vision of the portfolio that you are a part of?
    a. What degree of importance does your portfolio have compared to the larger overall portfolio?
        i. What are the criteria used?

Portfolio Output

14. How do you measure portfolio success?
    a. What measures do you currently use?
        i. "Output" or "capability"?
            1. How much did your portfolio deliver this year? Last year?
        ii. Stoplight charts?
            1. What do these really tell you about your portfolio?

Portfolio Manager Capabilities

15. What degree of control do you have over:
    a. the contents of your portfolio?

i. Inputs
ii. Outputs
b. the resources for your portfolio programs?
c. the requirements placed upon your portfolio programs?

16. What levers of control over the portfolio do you have?
    i. People?
    ii. Money?
    iii. Schedules?
    iv. Selection authority (start, kill, delay)?
    v. Requirements?
    vi. Other?
    b. What levers of control do you wish you had?
    c. Are there some levers of control that others have and you do not? How come?
        i. Who else can manipulate the "levers of control" of your portfolio?

Portfolio Information/Decision Making

17. What kinds of information do you use to make portfolio decisions?
    a. What information is most effective or helpful?
18. What kinds of information do you wish you had to make portfolio decisions?
19. How do you synthesize information from multiple programs into a portfolio-level view?
20. What kinds of things most often surprise you at the portfolio level?
    a. What role does risk play in your portfolio decision-making?
    b. What degree of risk do you currently carry within your portfolio? (risk exposure)
21. How do you use measures of risk to manage a portfolio?
    a. How do you synthesize portfolio-level risk?
22. How is information handled by the portfolio?
    a. How do you communicate news about your portfolio to superiors? (Upstream?)
    b. Downstream?
    c. How often are you "briefing" various staff and line offices about your portfolio programs?
        i. What is the ratio of decision briefs to informational briefs:
            1. you receive?
            2. you give to superiors?

Internal vs. External issuses

23. Describe some of the external influences or "overhead" that impact your portfolio? Explain how the portfolio is impacted? Where is the source of these influences, etc.?
    a. Higher Headquarters?
    b. Air Staff?
    c. OSD?
    d. Other agencies?
    e. Congress?
    f. Individual player personalities?
24. How do you deal with other programs not belonging to your portfolio (if applicable)?
25. What programs have interdependencies with each other and what is the strength of that relationship?
    a. Within your portfolio?
    b. Outside of your portfolio?

Appendix C – Sample questions used for second study

Questions for Enterprise participants

Emphasize that this is about portfolios (describe a "portfolio" if needed). There is no right or wrong answer. This interview is exploratory in nature and is designed to learn more about the enterprise, portfolios, and associated items.

About the Interviewee

1. What is the name of your job?
2. How long have you been in this position?
3. What kind of training is required for this position?
4. What is your professional background?
5. What are your duties?
6. What other duties do you have in addition to those of your job?

About the organization

7. How is a portfolio defined?
8. How many programs make up your portfolio?
9. How many people are in the organization?
10. What is the overall dollar size of your programs?
11. How are your programs managed?

Portfolio Management

12. What is the essence of materiel development/the portfolio management process?
13. Explain your understanding of the system used to manage portfolios.
14. What understanding do you have about the capacity of the system for development projects?
15. How do you synthesize information from multiple programs into a portfolio-level view?
16. How do you use risk to manage a portfolio?
17. How do you synthesize portfolio-level risk?

Portfolio Output

18. How do you measure portfolio success?
    a. What measures do you currently use? (Stoplight charts? What do they tell you?)
        i. "Output" or "capability"?
            1. How much did your portfolio deliver this year? Last year?

Portfolio Manager Capabilities

19. What degree of control do you have over:
    a. the contents of your portfolio?
        ii. Inputs
        iii. Outputs
    b. the resources for your portfolio programs?
    c. the requirements placed upon your portfolio programs?
20. What levers of control over the portfolio do you have?
        i. People?
        ii. Money?

iii. Schedules?
iv. Selection authority (start, kill, delay)?
v. Requirements?
vi. Other?

a. What levers of control do you wish you had?
b. Are there some levers of control that others have and you do not? How come?
    i. Who else can manipulate the "levers of control" of your portfolio?

Portfolio Information/Decision Making

21. What kinds of information do you use to make portfolio decisions?
    a. What information is most effective or helpful?
    b. What kinds of information do you wish you had to make portfolio decisions?
22. What kinds of things most often surprise you at the portfolio level?
    a. What role does risk play in your portfolio decision-making?
    b. What degree of risk do you currently carry within your portfolio? (risk exposure)

Internal vs. External issues

23. Describe some of the external influences or "overhead" that impact your portfolio? Explain how the portfolio is impacted? Where is the source of these influences, etc.?
    a. Higher Headquarters?
    b. Air Staff?
    c. OSD?
    d. Other agencies?
    e. Congress?
    f. Individual player personalities?
24. How do you deal with other programs not belonging to your portfolio (if applicable)?
25. What programs have interdependencies with each other and what is the strength of that relationship?
    a. Within your portfolio?
    b. Outside of your portfolio?

Portfolio Strategy

26. Does your portfolio have an overarching strategy or vision?
    a. What is it?
27. How do you measure progress towards reaching the portfolio vision or strategy?
28. What is the strategic vision of the portfolio that you are a part of?
29. What degree of importance does your portfolio have compared to the larger overall portfolio?

Appendix D – Description of Model and Data Documentation

Introductory description and explanation

The model used in this analysis attempts to keep the representations and generalizations simple but have enough detail to make the model worthwhile. There is no claim of 100% accuracy or complete representation of reality. The primary purpose of the model is to serve as a way to generate questions and understand the overall system in a way that has not been done before. Like every model, flaws exist and contain generalizations and abstractions that can be debated. From the highest level, the model is aptly described as a kind of nested hierarchy of various levels with each level becoming more and more detailed. A less detailed discussion about the model is in Chapter 5.

The model is organized around swim lanes. Each swim lane consists of a functional process, as well as organizational arrangement in the United States Air Force. The horizontal axis serves as a loose representation of time – or providing a temporal anchor to the description. The first swim lane is considered to be the User swim lane. This swim lane is the source of many different ideas, concepts, as well as formal direction given to various system development questions.

The second swim lane is titled the Requirements swim lane. This swim lane outlines the process of generating comments, approval and staffing of a requirements document necessary for the development of a weapon system.

The third swim lane is for the programming, planning, budgeting and execution system (PPBE) of the U.S. Air Force. This is the swim lane that controls the administration of the money planning, disbursement and execution processes. Those in the requirements swim lane are generally responsible for controlling the money and the fourth swim lane, titled Acquisition, is responsible for spending it.

More specifically, the fourth swim lane, Acquisition, is where all of the project or program administration and activities occur for the development of a new weapon system. This includes

functions such as program management, systems engineering, financial transactions, contracting actions, etc.

The final swim lane or fifth swim lane is titled Contractors. This swim lane is where the actual work is usually done; ideas are translated into products or systems, and ultimately this work is delivered to the government for approval.

Visually, the model is depicted in Figure 22: Model Scope in Relation to the Overall Acquisition System in Chapter 5. In the representation of this model, the swim lanes are horizontal and the vertical lines represent integrating activities that occur across all the swim lanes. These integrating events are called milestones as defined by the acquisition system. For a successful program to go from idea to delivery in the hands of the war fighter, successful navigation and integration of all of these processes must take place. The milestones are designed to play a key role in the successful delivery of the systems and bear resemblance to commercial stage-gate product development reviews.

The swim lanes also have differing assumptions as well as modes of operation. For instance, the user and the requirements swim lanes are discrete in nature while the programming and budgeting swim lane is continuous in nature. The acquisition and contracting swim lanes are a combination of continuous and discrete activities.

For the purposes of this dissertation, and to manage the scope of this project, the user swim lane will not be included in the detailed representation of the model. Also, any detailed definition of the model beyond Milestone C will not be done. At Milestone C, approval is given for the acquisition system to enter into production. By the time production has started, most of the major developmental decisions have already been made. Any addition or change to the current system will likely be handled under an engineering change proposal process by the organization that will most likely be responsible for the sustainment of the system, or the change will be redirected back through the entire formalized

acquisition system. These are some of the reasons why the model is not developed further and activities in these areas are not included.

The main outputs of the model are the time and cost of a program. The mathematics behind the model is quite simple and straightforward. The model uses probabilities and curve-fitting methods to address uncertainty and probabilities. The actual sources of these uncertainties and probabilities come from experts in the field that "live" in this process from day to day. For example, typical uncertainties would be the time duration associated with a given task. In those cases, usually a range of days was given, with the additional information of the most likely outcome. This allowed the use of a triangular distribution[59] to be used in the mathematical modeling. The time elapsed for a program is then simply the cumulative value of the number of days required to go through the overall system. The costs of the system will be changed at various places according to a few standing rules and heuristics, also derived from the interviews, such as add 1% to contract value at this point in the process.

Project Attributes

The unit of analysis in this model is the individual project or program. In order to initialize the model, there are several attributes that will be associated with each program. Some of these are artifacts of the model itself; trackers and counters to maintain a sense of place within the model; others are related to the actual outcomes measures, such as cost and schedule of the project.

Unit of Measurement

As mentioned earlier, the model's unit of measurement is the program. A program may consist of only one or multiple projects that eventually will result in a delivered item. Multiple programs may contribute key parts to an overall system. For example, the B-2 System, as of 2009, has four different programs associated with it. Two of the programs are designated ACAT Level III and two are designated

[59] In some cases, a binomial model is used and as required, extrapolated into a triangular distribution to match the constraints of the modeling environment.

ACAT Level IC. However, the F-22, as of 2009, has just one program and it is designated ACAT Level 1D. Within each of those programs can be multiple projects, working on a particular sub-system or component. Regardless of the confusion this might cause, for purposes of this model, the main unit of measurement will be the program.

For purposes of model definition, verification and validation, several programs of differing sizes and time durations will be used. The rough outlines of these programs will be broken down according to ACAT levels as there is a strong probability that different ACAT levels result in different levels of attention and scrutiny, translating into possible differences in time distributions and decision probabilities.

As the model is tested and validated, these differences will be explored and a final determination made prior to coding the model in a computer program. When the model is coded, different techniques, such as Monte Carlo simulations will be used to find the range of all possible outcomes as well as a determination as to how many runs, samples, etc., need to be accomplished to develop confidence in the data outcomes. Chapter 6 discusses this process in great detail.

ACAT Discussion

As a brief reminder, here are the ACAT level definitions and the ones that will be used to differentiate between programs. DOD 5002, Enclosure E states "A technology project or acquisition program shall be categorized based on its location in the acquisition process, dollar value, and MDA special interest" [148]. The following table is from DOD 5002 describing the different ACAT levels [148].

Table E2.T1. Description and Decision Authority for ACAT I – III Programs

Acquisition Category	Reason for ACAT Designation	Decision Authority
ACAT I	• MDAP (10 USC 2430, reference (n))) o Dollar value: estimated by the USD(AT&L) to require an eventual total expenditure for research, development, test and evaluation (RDT&E) of more than $365 million in fiscal year (FY) 2000 constant dollars or, for procurement, of more than $2.190 billion in FY 2000 constant dollars o MDA designation • MDA designation as special interest	ACAT ID: USD(AT&L) ACAT IC: Head of the DOD Component or, if delegated, the DOD Component Acquisition Executive (CAE)
ACAT IA	• MAIS: Dollar value of AIS estimated by the DOD Component Head to require program costs (all appropriations) in any single year in excess of $32 million in fiscal year (FY) 2000 constant dollars, total program costs in excess of $126 million in FY 2000 constant dollars, or total life-cycle costs in excess of $378 million in FY 2000 constant dollars • MDA designation as special interest	ACAT IAM: ASD (C3I)/DOD CIO ACAT IAC: CAE, as delegated by the DOD CIO
ACAT II	• Does not meet criteria for ACAT I • Major system o Dollar value: estimated by the DOD Component Head to require an eventual total expenditure for RDT&E of more than $140 million in FY 2000 constant dollars, or for procurement of more than $660 million in FY 2000 constant	DOD CAE or the individual designated by the CAE

	dollars (10 USC 2302d, reference (o)) o MDA designation 4 (10 USC 2302(5), reference (p)) • MDA designation as special interest	
ACAT III	• Does not meet criteria for ACAT II or above • Less-than a MAIS program	Designated by the DOD CAE at the lowest level appropriate
Notes: • *In some cases, an ACAT IA program, as defined above, also meets the definition of an MDAP. The USD(AT&L) and the ASD(C3I)/DOD CIO shall decide who will be the MDA for such programs. Regardless of who is the MDA, the statutory requirements that apply to MDAPs shall apply to such programs.* • *An AIS program is an acquisition program that acquires IT, except IT that involves equipment that is an integral part of a weapon or weapons system, or is an acquisition of services program.* • *The ASD (C3I)/DOD CIO shall designate programs as ACAT IAM or ACAT IAC. MAIS programs shall not be designated as ACAT II.* • *As delegated by the Secretary of Defense or Secretary of the Military Department.*		

Table 51: Description and Decision Authority for ACAT I – III Programs

Additionally, there is some confusion about when an ACAT level is determined.

> "Selection of the Milestone Decision Authority (MDA) occurs during the capabilities generation process. **A potential ACAT designation is indicated on the Initial Capabilities Document** per CJCSM 3170.01B, along with the MDA. Approval of this document is required prior to the Concept Decision. The potential ACAT is determined **based on an assessment of cost, complexity, and risk (may be very much an estimate of all three)**. Even though alternatives are being looked at, it may be apparent whom the proper MDA should be. The formal designation is made when the Capabilities Development Document is approved. Some large and of interest programs are placed on a pre-MDAP list by DOD prior to MS B" [149bold text added].

This model therefore makes an assumption from the very beginning what the ACAT level of a program will be. Based on the above quote from the Defense Acquisition University Knowledge Sharing System website, this assumption is reasonable.

The Programming, Planning, Budgeting and Execution Process

The Budgeting and Programming swim lane will be discussed separately from the rest of the model. It is a continuous process and is the most structured and defined of any of the swim lanes under consideration. It is reasonable to call the swim lane the drum by which all others must march. It gives a

rough duration of a "takt" time for the overall system as all other swim lanes must work with and around the processes within this swim lane.

Through the modeling activity for the entire system, it became apparent that interviewees and other sources already mentally reckoned for the operation of the PPBE juxtaposed against the activities of an individual program. Therefore, the formal model used in the dissertation research accounts for the PPBE vagaries through several surrogate tasks and decisions. These surrogates are more likely to be "event" driven and serve to cause delays, etc., until proper alignment can be reached with the PPBE. The purpose of the description of this portion of the larger Acquisition system is to familiarize the reader with the overall structure of the PPBE as well as the complexity involved. A high level description of the PPBE occurs in Chapter 2.

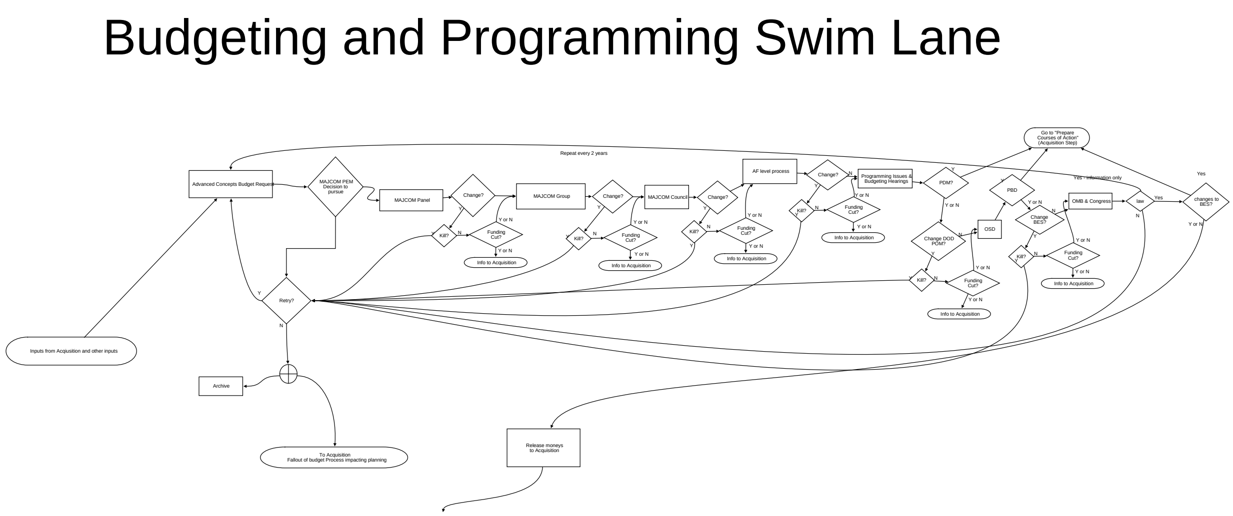


Figure 53: Graphical representation of PPBE Swim Lane

The figure above shows a model depiction of the PPBE. The process typically "starts" at the lowest level possible – that of a MAJCOM planning activity. Oftentimes, this process will begin two and one-half or more years prior to the actual enactment of the budget into law. And, since the process duration is at least two years, the "start" of each cycle begins each year. To better understand the reality of these policies, a "new start" budget request means that approximately two and one-half years prior to the money being available to be spent, a budget request must be made. As many players

attempt to synchronize the availability of funding to do work, it requires a great deal of prognosticative ability to estimate the budget correctly for the "new start". However, the ability and likelihood of being able to 'adjust' these budget numbers in the future is high. A program's "schedule is like an accordion to get alignment with the actual PPBE" (PPBE Participant). The first major assumption made in this swim lane is that both the odd and even years are going to be modeled the same, but the official outcomes may have different names even though functionally they are the same.

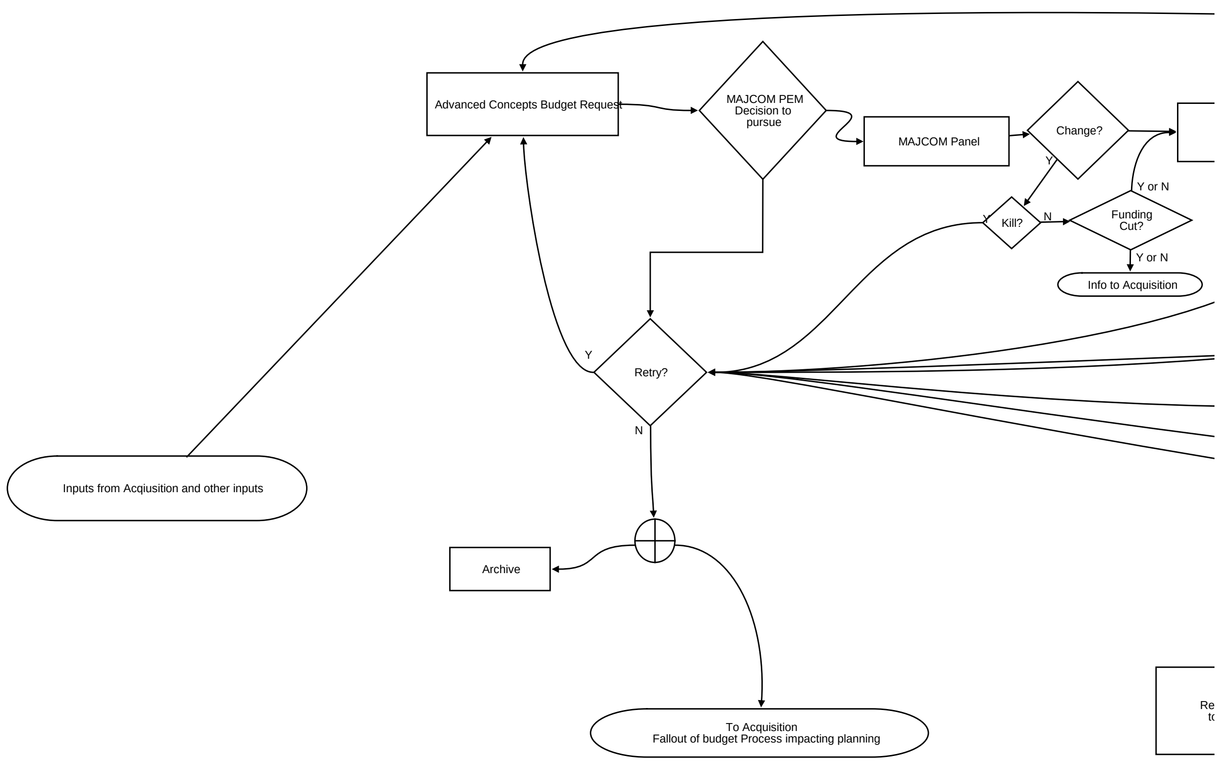


Figure 54: First third of PPBE model

The "first" task within the Budgeting and Programming swim lane is "Advanced Concepts Budget Request". See figure above. This organization is just one of many competing for the resources in the AF Budget. It coordinates with the Requirements branch regarding the information of a potential new program. In the Pre-MS A phase, the main activity is planning the resources required for the initial studies to support the development of the ICD and later, if required, the Analysis of Alternatives required to develop the draft CCD. The further a program is along in its development and declared

milestone, the more definition and certainty accompanies these budget requests. As this organization has many activities going on at any given time, it is balancing many competing interests and ideas and limited resources. This task requires approximately 30 to 35 days to bring everything together. Its distribution is binomial, p=0.7. The source of this information comes from various published timelines and documents outlining the overall process.

A decision task entitled “MAJCOM PEM Decision to pursue” has a probability of 95%. See figure above. This probability is due to the active steps being taken to develop a requirements document and the other activities going on at any given time within the Requirements branch. The idea is to support as many initiatives as possible. The next time an idea goes through the process, the probability rises to 99% (ergo, the program is in development and has already passed a first round of scrutiny going up to the highest levels of the AF. The source of this information comes from interviews.

A process task entitled “MAJCOM Panel” has a time distribution of 30 to 35 days. See the figure above. Its distribution is also binomial, p=0.7. The source of this information comes from interviews and source documents outlining the process flow. At the Panel, the idea/program/activity competes with all of the other items for the piece of resources that is under the purview of the panel. The panels are typically given a “bogey” to meet. Choices have to be made between existing programs versus new programs. It is a balancing act. Typically there are several categories used to discriminate the funding: “hold”, “new”, “reduce”. Any program that is a “Chief’s program,” e.g. a program with a personal advocate being the Chief of Staff or any 4-star general, gets a “free-pass” at this stage. Stoplight charts are used focusing on items such as spending rates, funding profiles, health of the overall program, etc. There are two measuring sticks for programs: Criticality (1 = “AF driven” through 5 = “Outside influence”) and Radioactivity (A = “the world will end” through D = “lowest level of concern”). The “risk” to an upcoming Milestone plays heavily in these deliberations. The Panel deliberation time is very stringent.

A decision point entitled “Change?” has a probability of 50%. However, if the idea has previously been approved, the probability drops to 5%. This step captures the outcome of the panel process, being approved or denied funding. Again, the values associated with this process indicate the synergy of multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, we need to determine what happened to the project if it did get changed. The first question to ask is if the program was killed. The probability of this step is 5%. If the project has been through the process before, the probability decreases to 1%. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program.

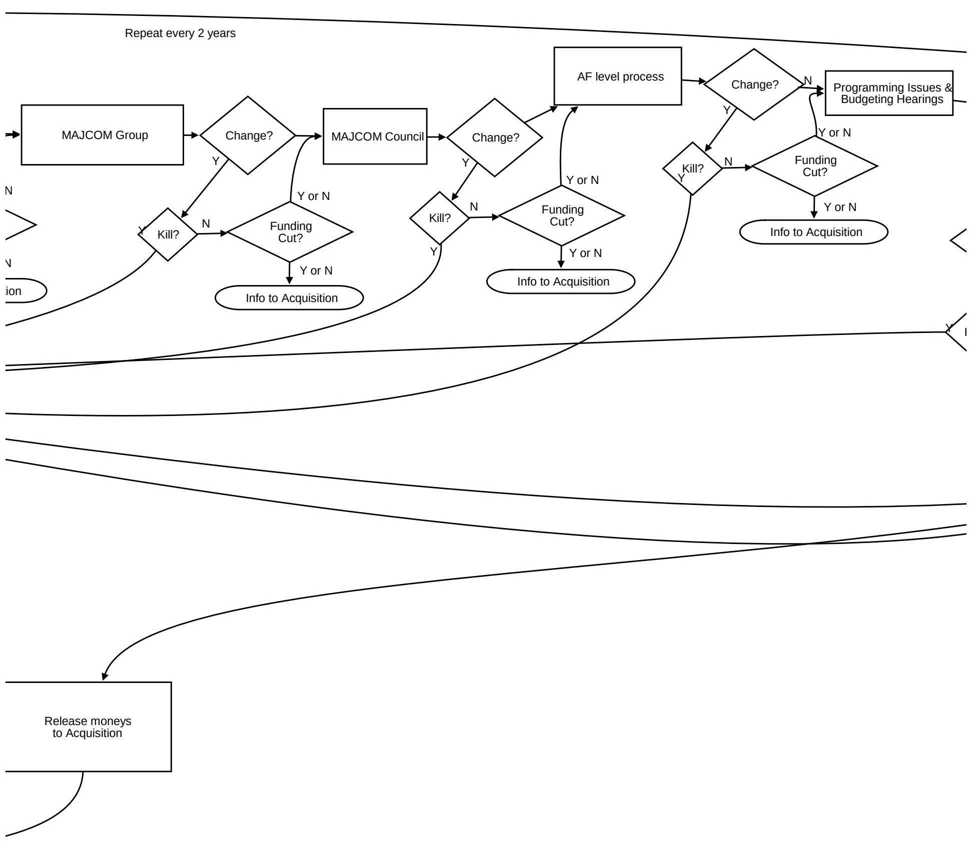


Figure 55: Middle third of PPBE model

A process task entitled “MAJCOM group” has a time distribution of 30 to 35 days. See the figure above to see its relationship to the other PPBE processes. Its distribution is binomial, p=0.7. As the MAJCOM Panel before, this group has a larger slice of resources to distribute and combines the inputs of several panels. Some adjustments are made in the panel submissions based on new information, changing priorities, etc. The source of this information is from an interview, official documents and published timelines.

A decision point entitled “Change?” has a probability of 40%. If the idea has previously been approved, the probability drops to 10%. This step captures the outcome of the panel process, being approved or denied funding. Again, the values associated with this process indicate the synergy of multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, we need to determine what happened to the project if it did get changed. The first question to ask is if the program was killed. The probability of this step is 5%. If the project has been through the process before, the probability decreases to 1%. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program.

A process task entitled “MAJCOM Council” has a time distribution of 30 to 35 days. See the figure above. Its distribution is binomial, p=0.7. As the MAJCOM group before, the council has the responsibility to integrate all of the MAJCOM resources into a coherent budget request. Some adjustments are made in the council recommendations based on new information, changing priorities, etc. The source of this information is from an interview, official documents and published timelines.

A decision point entitled “Change?” has a probability of 30%. If the idea has previously been approved, the probability drops to 15%. This step captures the outcome of the panel process: being approved or denied funding. Again, the values associated with this process indicate the synergy of

multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, there is a need to determine what happened to the project if it did get changed. The first question asked is if the program was killed. The probability of this step is 15%. If the project has been through the process before, the probability decreases to 1%. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program. All of the process steps and proposed timelines prior to this point come from an Air Combat Command Presentation [111]. The activity runs from mid-August through mid-December.

After these processes occur, there is very little control that the sponsor has over the program in question. In this case, other factors come into play. For instance, if a program will be done within budget and on schedule in four years, but the AF doesn't need it for six, the program will have its funding cut to delay it by two years until it is needed. The same is true for interdependencies. If another program is required for something to work, but it has been delayed, all programs that are connected with this program will be heavily scrutinized to see if "savings" can be achieved by cutting budgets now, e.g. in order to delay all of these systems, until the time that they are needed. The next process depicted in the figure above is where this scrutiny happens the most. In fact, while the sponsor spends a tremendous amount of time defending their programs, they are often bystanders in the process.

A process task called "AF level process" has a time length of 210 - 225 days. Its distribution shape is binomial, p=0.7. This is the first major abstraction in the budgeting and programming process. The AF has a similar process to the MAJCOM process with panels, groups, and the council. This is described in detail in the section of Chapter 2 entitled PPBE. In this case the product is the overall AF budget request. As the budget is being finalized, changes to various programs are inevitable. In reality,

OSD is running several activities in parallel. Right now all of these are accounted for in this process. The PEM that is in the first process step is constantly following the progress of "their" particular program and championing it's survival through the entire process. This is a full-time activity for the PEM. The source of this information is interviews, official documents, and published timelines.

A decision point entitled "Change?" has a probability of 35%. If the idea has previously been approved, the probability drops to 15%. This step captures the outcome of the panel process, being approved or denied funding. Again, the values associated with this process indicate the synergy of multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, there is a need to determine what happened to the project if it did get changed. The first question to ask is if the program was killed. The probability of this step is 15%. If the project has been through the process before, the probability decreases to 1%. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program.

A process task called "Programming issues and Budgeting Hearings" has a time length of 60 – 75 days and is depicted in the figure above. The process has a time distribution that is binomial, p=0.70. This is another major abstraction in the budgeting and programming process. OSD is involved and has its own process for determining the OSD budget request. In this case the product is the DOD POM and any Program Decision Memorandums (PDMs). As the budget is being finalized, changes to various programs are inevitable; PDMs document the major program issues. A PDM is an official acknowledgement of a change to a program's budget request and documents the decisions made. The PDM is used by Acquisition to plan the program expenditures over time. Furthermore, many budgeting issues are going on like hearings and formal questions between the DOD and other government branches. The source of this information is interviews, official documents, and published timelines.

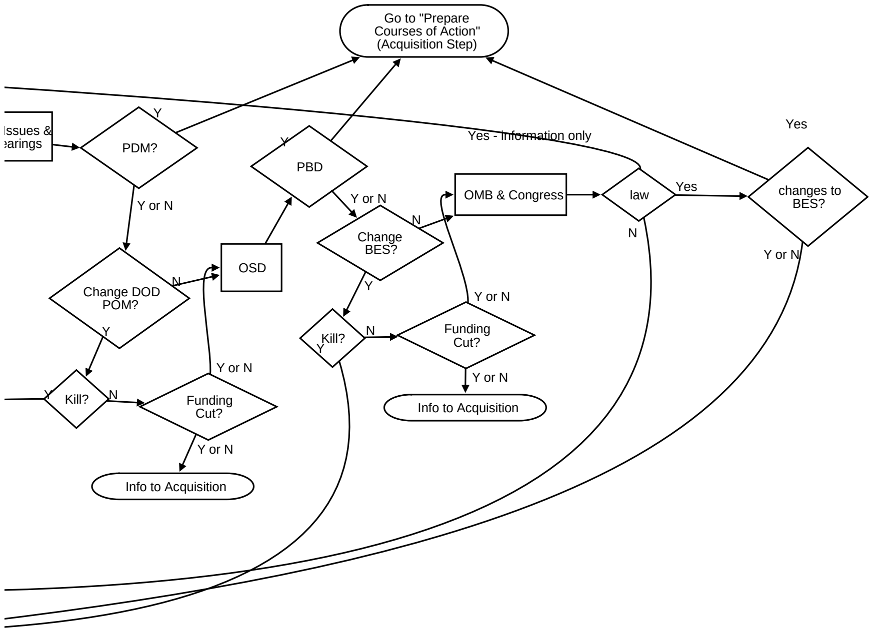


Figure 56: Last third of PPBE model

A decision point named "PDM?" has a probability of 100% for being "no" the first time through the process and remains that way until after MS B is reached and it is an official "program of record"; afterwards, there is a 5% probability of being "yes". If yes, the outcome triggers the start of the "Prepare Courses of Action" process task within the Acquisition swim lane. This decision point is interesting as is it possible that no PDM is ever issued yet the program does not survive the budget process within DOD.

If "no", a decision point entitled "Change DOD POM is reached." It has a probability of 30%. If the idea has previously been approved, the probability drops to 15%. This step captures the outcome of the process: being approved or denied funding. Again, the values associated with this process indicate the synergy of multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, there is a need to determine what happened to the project if it did get changed. The first question to ask is if the program was killed. The probability of this step is 10%. If the project has been through the process before, the probability

decreases to 1%. This is again due to the pressures and momentum that an existing program already has at all stages of the program. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program. The source of this information is an interview as well as published documents and timelines.

A process task entitled "OSD" has a time distribution of 30 - 45 days. Please see the figure above to determine its relationship to the other PPBE tasks and processes. Its distribution is binomial, p=0.7. This is another major abstraction in the budgeting and programming process. OSD works closely with the other services resolving issues that have come up in the other programming and budgeting phases. In this case, the product is the final BES, Budget Estimate Submission and any Program Budget Decisions (PBDs). A PBD is an official acknowledgement of a change to a program's budget request due to execution issues and documents the decisions made. As the budget is being finalized, issues occasionally arise due to current programs having problems executing their budgets; PBDs document these decisions about execution issues. The PBD is used by Acquisition to plan the program expenditures over time. The source of this information is interviews, official documents, and published timelines.

A decision point named "PBD?" has a probability of 100% for being "no" the first time through the process; afterwards, there is a 5% probability of being "yes". Please see the figure above. If yes, the outcomes triggers the start of the "Prepare Courses of Action" process task within the Acquisition swim lane. This decision point is interesting as is it possible that no PBD is ever issued yet the program does not survive the budget process within the executive branch.

If "no", a decision point entitled "Change BES?" is reached. It has a probability of 20%. If the idea has previously been approved, the probability drops to 5%. If the idea has previously been approved but the PBD step was answered "yes", this probability increases to 50%. This step captures

the outcome of the process: being approved or denied funding. Again, the values associated with this process indicate the synergy of multiple activities going forward, reflecting information from the requirements branch in particular and other stakeholders. However, to be more specific, there is a need to determine what happened to the project if it did get changed. The first question to ask is if the program was killed. The probability of this step is 5%. If the project has been through the process before, the probability decreases to 1%. This is again due to the pressures and momentum that an existing program already has at all stages of the program. If the program is not killed, the next question asked is if the program received a funding cut. The probably of this step is 99%. Regardless of the outcome, information about the change is transmitted to other processes outside of the swim lane that have an interest in the program. The source of this information is an interview as well as published documents and timelines, in particular, the online Chapter 1.2 of the Defense Acquisition Guidebook, “Planning, Programming, Budgeting and Execution (PPBE) Process” [150].

A process task named “Congress” has a time distribution of 240 to 330 days. Its distribution is binomial, p=0.7. This task includes the processes going on in the Executive Branch’s Office of Management and Budget as well as the deliberations done by Congress. Officially, the time allotted for passage of the next budget ends on 30 September, but Congress has a poor track record of completing its work on time. Usually, when they haven’t finished their work on time, a Continuing Resolution is passed, giving the government authority to spend at 90% of last year’s levels on existing programs only. To account for the possibility of this happening, a time distribution is allotted for a process that should be a time-driven, defined event. The model will treat this step as one that must be finished before the first contractor work can begin. After that, delays past the 720-day “cycle” could trigger the step in the Acquisition swim lane, “Prepare Courses of Action”, to adjust for the unexpected delays and assess program impacts. The source of this information is public records.

A decision task named “law” captures the chance that a program might be removed entirely by Congress. Please see the figure above. The probability of this happening is approximately 3% or there is a 97% chance the program emerges through Congress. The source of this information is experience and intuition.

A decision task named “Changes to BES?” reflects the strong possibility that Congress may in fact change the requested amounts. Most of these changes occur during the mark-up process during Congress. The probability of this happening is 35%. If “yes”, this triggers the “Prepare Courses of Action” task in the Acquisition Swim Lane. Regardless of outcomes, another task entitled “Release moneys to Acquisition” has a time distribution of 15 to 35 days. Please see the figure titled “Middle third of PPBE model.” Its distribution is binomial, p=0.7. The distribution reflects the time required for the money to be dispersed to the lower levels of the Air Force and the actual office responsible for spending the money through contracting actions. The source of this information is based upon experience and common understanding of how moneys flow through the system.

The path of any “no” branch from the “next step”, “DOD POM”, “BES”, and “law” goes to another decision point, “Retry” with a probability of 99%. Please see the figure titled, “First third of PPBE model.” The reason for the high percentage is that most of these ideas will simply end up on a “wish list” of some kind that is vying for resources. Over time, the object of these efforts to gain resources of some kind will be successful. The path as depicted in the figures is to go through the entire process again, but in actuality, the budget request step is re-prepared within 7 days (1 to 7 days). This step has a binomial distribution, p=0.4. The MAJCOM PEM decision point is also repeated and then is directly inserted into the process step that is currently on-going as long as it stays within the MAJCOM process. However, if the rejecting step was at the AF level, the system will have to wait until the next budget process begins with all of the same probabilities and time durations. Otherwise, a “no” at the PEM decision point will go to an archive and the model ends at this point for this idea.

This "overall" process will continue throughout the execution and delivery of the overall program. By definition, it repeats itself and interacts with programs and other aspects of the Acquisition system at whatever point in the development of a program it needs to. For the purposes of understanding the Acquisition system, the PPBE model constitutes a stand-alone component of the overall system. It is instructive and useful to understand the dynamics involved in building the budget, but the uncertainties are already accounted for in the overall workings of the model, as discussed earlier. The PPBE model, as described above, was validated by a PPBE participant working within AF/A5.

Detailed Model Explanation

The following pages will contain a more detailed breakdown of the contents and processes defining the other swim lanes. Each swim lane consists of multiple activities characterized by tasks with a corresponding time distribution and decisions accompanied by probabilities. As these tasks and decisions are strung together, the overall workings of each swim lane can be approximated.

The detailed breakdown will also include, at each process task and decision point, information regarding its time distribution, if it is a process, or its probability, if it is a decision. Other model elements that exist to assist in the operation of the model will be discussed as well. Additionally, the source or the rationale for choosing this information and any additional heuristics that may or may not be followed will be given. An example of the potential for heuristics that might be followed include different time distributions depending upon its political import, the magnitude, cost, or schedule associated with a particular project, or differing time distributions depending on how many times a particular activity has gone through this process before, or where other scenarios or scenario-based events would cause these distributions to change. The same would also hold true for the probabilities associated with decision points.

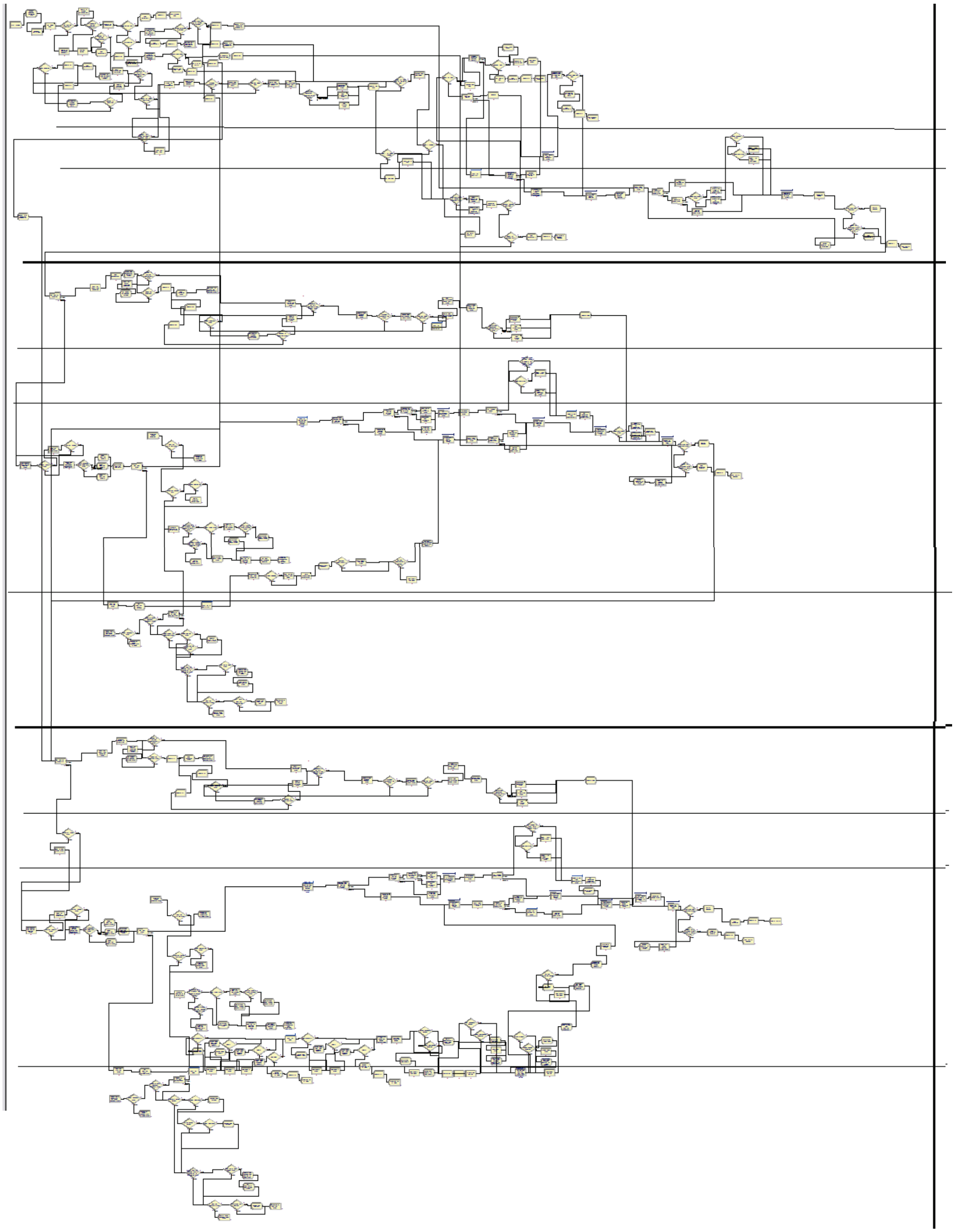


Figure 57: Final Model Representation

As mentioned earlier in Chapter 5, the model above is a representation or an abstraction of the overall Acquisition system. The following figure attempts to highlight some of key sections represented

in graphical model used in the research. Please note how the different swim lanes are labeled as well as the key phases, e.g. Pre-MS A, Pre-MS B, and Pre-MS C, are identified.

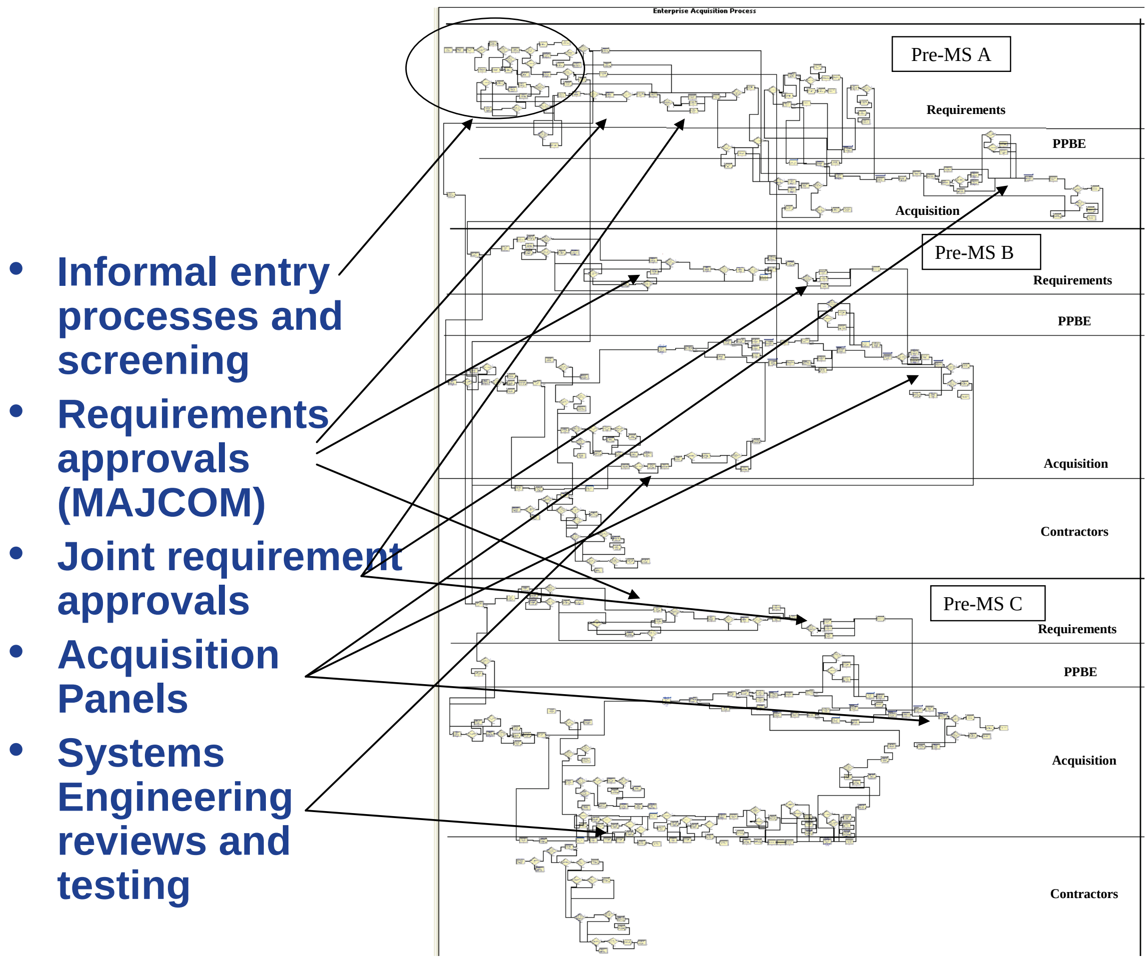


Figure 58: Final model with descriptive labels

Through the remainder of this appendix, various sections of the model will be identified and shown with a close-up view.

The Pre-Milestone A Swim Lanes

The following section will go into details on the Pre-Milestone A swim lane. It will break down the sections into legible pieces that will allow the reader to fully understand the model's construction.

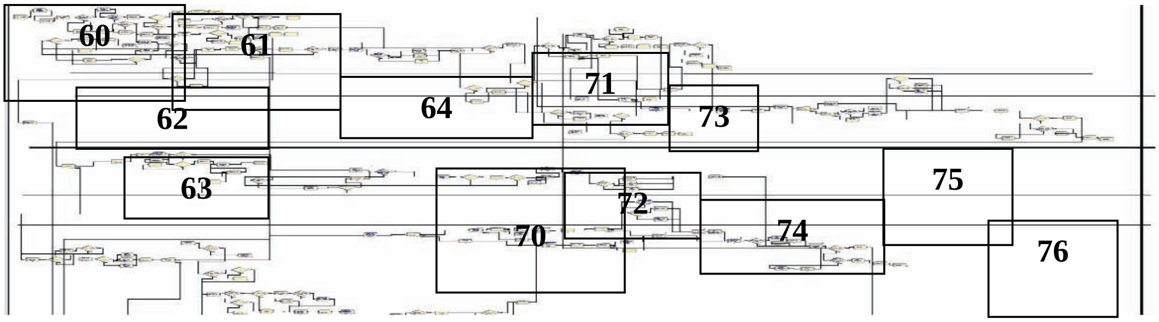


Figure 59: Pre-MS A portion of model with close up sections marked

The figure above indicates which figure to refer to in order to get detailed model information on specific sections of the model. The detailed explanation for the content within the figure will immediately follow the figure.

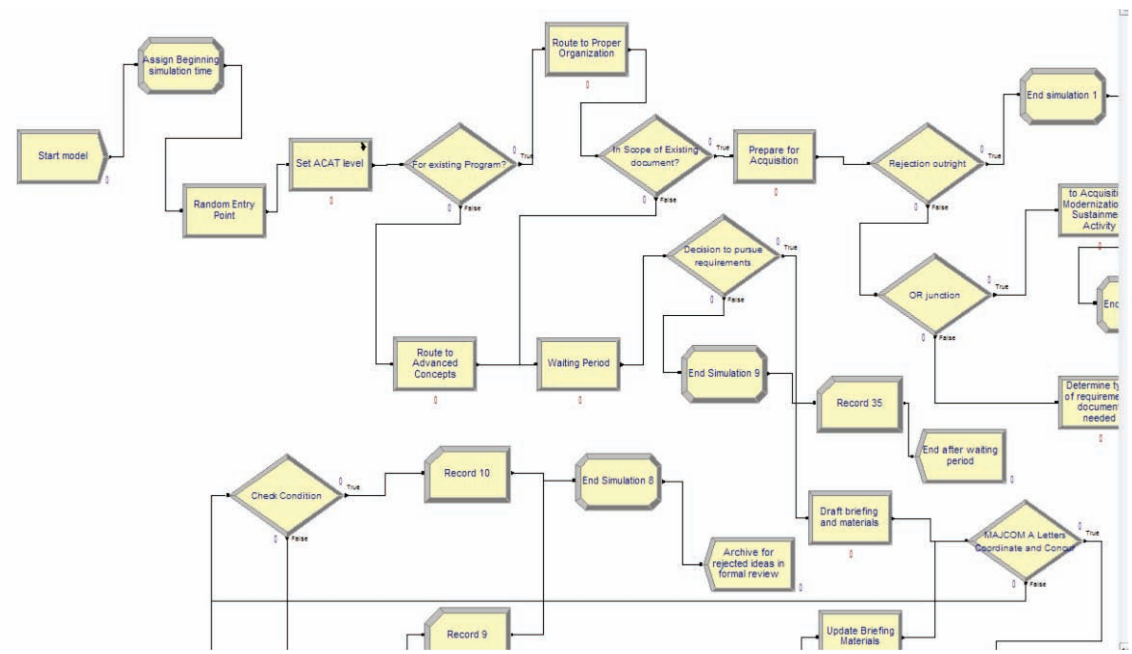


Figure 60: Early Pre-MS A close up

The entry point into the entire model as well as the requirements swim lane consists of a simple starting point called "Start Model." The item entitled "Assign Beginning simulation time" is to facilitate bookkeeping within the model, e.g. an artifact of the model and not the overall process. The real entry point is simulated with a random process with a time distribution anywhere from 1 to 365 days. This is titled "Random Entry Point." This condition simulates the dynamic nature of ideas and requests coming

into the requirements system at any time during the year. This information was validated by individuals who work in the requirements system. There are no distinct trends that determine when an idea arrives for their disposition. The interesting thing about this time distribution is that it does impact how and when an idea is pushed into other systems. For instance, something that comes in the middle or the later end of the year will most likely not make it into the following year's financial deliberations. Of course, there are always exceptions to the rule, particularly if they find this particular idea to have a lot of potential, or it has some political implications that need to be addressed immediately. However, for the purposes of this model, we are going to assume that these kinds of unusual situations will not apply. Furthermore, some Major Commands have very detailed processes about how formalized entries are made into the system. One such command estimates that it can take upwards of more than a year prior to the "entry" as designated by this model [151]. Since every command is different, the model assumes the arrival of the idea or program has already finished going through these other processes. The main assumption is that regardless of where a new idea is generated, it must eventually follow this process and begin at this point. No attempt is made to track the original genesis of the idea, nor how long it takes for the idea to make it to the organization responsible for determining where it needs to go.

The process "Set ACAT level" is simply a task to randomly assign all entries to the system to different ACAT levels. This is an artificial exercise at this point. Normally, a great deal of analysis goes into such designations. Unfortunately, there are several methods and ways that such designations are done. Therefore to avoid having multiple "assignment" modules, this was done up front. Subsequent analysis has verified that this assignment up front and early in the process does not impact the ratio of ACAT categories that arrive at MS C. There is a 52% probability to be assigned an ACAT III, a 14% probability to be assigned an ACAT II, a 5% probability to be assigned as an ACAT IAC, a 9% probability to be assigned as an ACAT 1C, an 8% probability to be assigned as an ACAT 1D, and a 12% probability to be assigned as an ACAT IAM. The model will lump all ACAT I variations together into a general ACAT I

category. The breakout was done to facilitate potential future work with the model on specific ACAT levels.

The next block in this process flow is called "For existing program?" This is a probabilistic step with a 75% probability that a new idea will be routed to an existing program or organization. The source of this information is from an interview conducted in 2007 and later validated in 2008.

The next process entitled "Route to proper organization" has a triangular distribution. The minimum is 3 days, the most likely is 3 days, and the maximum is 7 days. The source of this information is an interview with a JCIDS participant at the MAJCOM level.

A probabilistic decision point entitled "In scope of existing documents?" has a probability of 85% of being in scope of existing documentation. The source of this information is derived from a cursory review of the number of “new starts,” e.g. items identified as “new” within the PPBE and also has an approved requirement document, versus the existing and approved budget line items. This approximation was later validated by interview data. If the outcome at this step is “no” then the process proceeds to the next task, the “socializing waiting period” task.

A task entitled "Prepare for acquisition" has a time distribution of 5 days to 1460 days, or about 4 years. However, the distribution is skewed highly to the left, meaning that most of the ideas do get sent out in a relatively short period of time, so the most likely value chosen was 7 days. These data points were validated by a JCIDS participant at the MAJCOM. Some ideas, although they are passed to the proper organization, simply will never get passed to acquisition, which is modeled via the large upper bound to the distribution.

Following this task is a decision point, titled “Rejection outright” that rejects 55% of these projects or ideas, e.g. the activity has matured and is ready, or it has not “bubbled” up in the prioritization processes. For the purposes of the model, upon rejection, this branch of the model will end and is noted by the “End Simulation 1” model artifact and also artifacts called “Record 1” and “Early

Archive End” shown in Figure 61. However, those surviving this initial screen meet an “OR” junction where 75% of the process flow goes to the next activity of “to Acquisition Modernization/Sustainment Activity” while 25% will be sent to a system currently in development.

Therefore, the task entitled "to acquisition modernization or sustainment activity" has a time distribution of 180 to 1460 days, with a most likely value of 903 days. The wide range reflects the likelihood that the complexity of these ideas is low (low-cost modification) or development and installation is straightforward. It also implies that these ideas will tap into the existing funding sources used for sustainment of these programs and platforms. The most likely value of 903 days was derived from a binomial distribution where p=0.6. The source of this information is varied: from expert opinion; by inference; and discussions with various people associated with these activities in the acquisition community. It was later validated by a JCIDS participant.

For the 25% being sent to the system currently in development, the next step is called “Determine the type of requirements document needed,” e.g. or the appropriate Acquisition Milestone Point of entry. Better said, this step is simply a waiting period. This waiting period is an ill-defined activity, but nonetheless critical. It is a time that is used to socialize the idea among the decision makers within the requirements system in an informal manner. It is also a time where the technology feasibility is “checked out”, especially if the source of the new idea is a contractor. According to interviewees, the current culture of the requirements system is to treat inputs to the process with skepticism. This is the period of time where a notional ACAT level determination is made as well. The time distribution associated with this new idea ranges from 14 days to 180 days with a most likely value of 118 derived from a binomial distribution where p = .7. This information was uncovered during the validation phase of the model development with the help of a MAJCOM JCIDS participant and also an acquisition expert within the SAF/AQ organization.

Returning to another path, if the determination of the decision point “In scope of existing documents” is no, the next step is a waiting period. This waiting period is an ill-defined activity, but nonetheless critical for the next step to be taken. It is a time that is used to socialize the idea among the decision makers within the requirements system in an informal manner. It is also a time where the technology feasibility is “checked out”, especially if the source of the new idea is a contractor. The culture of the requirements system is to treat such inputs with skepticism. This is the period of time where a notional ACAT level determination is made. The time distribution associated with this new idea ranges from 14 days to 180 days with a binomial, p = .7. This information was uncovered during the validation phase of this activity with a JCIDS participant.

As a point of reference, ICDs are pursued for two major reasons (if they are forced to do so). First, it is used to come up with the best solution or second, to justify a pre-conceived notion. The good news is that the personnel who manage the overall document process “never see the same thing twice” as an ICD and this is based upon their 20-plus years of history working on the overall process. This observation was validated by a JCIDS participant supervising the process.

Upon completion of this step, the decision point entitled “decision to pursue requirements” is met. The probability of proceeding further is 25% simply because of the burden required on individual requirements officers to shepherd a new idea/system/etc through the overall system. It is a high threshold and tends to discourage a lot of frivolous things from entering into the overall system. This step was validated by a JCIDS participant.

If the answer is no, the activity is considered out of the scope of the model, e.g. actually stored in an archive, and the process flow ends at this point. The items “End Simulation 9,” “Record 35,” and “End after waiting period” are model artifacts necessary for bookkeeping within the model. The source of this information comes from information obtained in interviews, some personal experience and by inference. It was later validated by a JCIDS participant. In reality, at any point in the model where an

idea or program is “killed” and put into an “archive,” it simply means that it can reenter the overall system from the beginning without official prejudice at another time.

Stepping down another branch earlier in the model, if the decision point “For existing Program?” says “no,” a task entitled "Route to Advanced Concepts" has a triangular time distribution of 3 to 12 days, with the most likely result to be 7.5 days. Items are routed here if an existing program can not be determined to exist. The majority of these ideas will be studied and evaluated by consultants and others to help this office determine whether or not they wish to proceed to the next step. It is at this point that programs and projects begin to receive their initial attribute characteristics to include the concepts’ cost, schedule, etc. This activity continues in the next step entitled “waiting period,” which has already been discussed. The source of this information was validated by a JCIDS participant.

A task entitled "draft briefing and materials" has a time distribution of 10 to 40 days, with a most likely value of 31 days. The source of this information is from inference from interview data with a JCIDS participant.

A decision point entitled "MAJCOM "A" letters Coordinate and Concur" has a probability of 80%. The source of this information is interview and later validation by a JCIDS Participant.

If the decision of the “A” letters is to proceed, an out-of-swim lane activity occurs in conjunction with the Budget swim lane if it is an ACAT I potential program. This will be discussed later as it is referenced on another figure. If the decision of the “A” letters is to decide against the program, the next step is a decision point entitled “Check Condition” checking to see if the program has “failed” before. If so, the program is killed and archived, as shown in the model artifacts “Record 10,” “End Simulation 8” and “Archive for rejected ideas in formal review.” If the condition has only been met once, the next step is setting a model attribute indicating it has failed, shown in Figure 62, then another decision point debating whether or not to pursue the process further, also shown in Figure 62. This decision point will be discussed in detail later. If “yes,” the process activity “Update Briefing Materials,” shown on Figure

60, is met. It has a time distribution of 10 to 40 days with a most likely value of 35 days. The activity re-engages the normal process at the MAJCOM "A" letter stage. The source for this information is by inference, and by discussions obtained over multiple interviews with different people. It was later validated by a JCIDS participant.

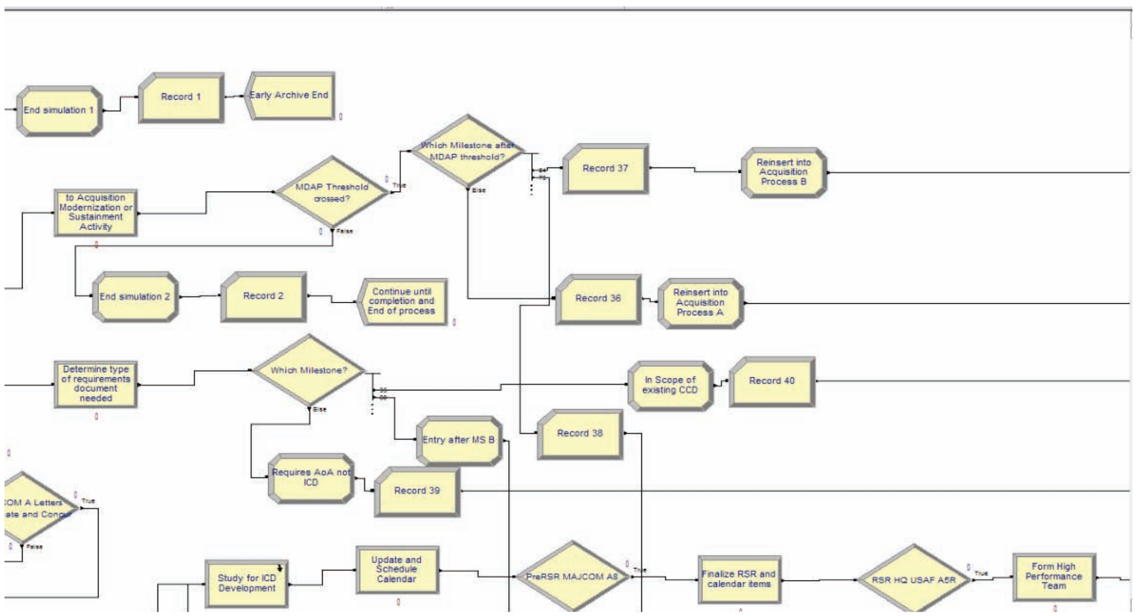


Figure 61: Early Pre-MS A close up in requirements swim lane after initial screening

Following the "Acquisition Modernization or Sustainment Activity," a decision point entitled, "MDAP threshold crossed?" is met. It has a probability of 10%. This particular decision point makes sense at this period of time, particularly if it is a larger development. That's because over time the program has reached a point where certain acquisition process thresholds, especially cost ones, have been crossed. As individuals working on these programs become aware of these thresholds, they will be forced to make decisions and do what is necessary to get things back into the formal process and flow of things. If the answer is "true" 10% of the time, the next step is a probabilistic point where the activities are separated into the different Milestone tracks. 1% enter the system as if an ICD was just approved, requiring an AOA or long-term development, noted by the model artifacts entitled "Record 36" and "Reinsert into Acquisition Process A." 24% enter the system just prior to Milestone B, concluding that

no further technology development is required. This is noted by model artifacts "Record 37" and "Reinsert into Acquisition Process B." 75% enter the system just after Milestone B to begin system development and demonstration. This is noted by model artifacts "Record 38" and "Reinsert into Acquisition Process C" (not shown). As stated with an earlier system process, regardless of the outcome, there is tremendous institutional pressure to push the activity as far forward in the acquisition system as possible. These institutional pressures result from the desire to field a capability quickly, "save" money by avoid a long development cycle, and from the belief that the "system" takes too long following the regular process. However, 90% of the time these programs remain in the sustainment system. These programs are then dropped from the model for any further processing. This is represented by the model artifacts titled, "End Simulation 2," "Record 2," and "Continue until completion and End of process." The source of this information is derived from various interviews with players involved in the overall process and was further validated by a JCIDS participant.

Following the process of "Determining type of requirements document needed" which was also shown on Figure 60, the next step is a probabilistic point where the activities are separated into the different Milestone tracks. Five percent enter the system as if an ICD was just approved, requiring an AOA or long-term development. The model artifacts for this are "Requires AoA not ICD" and "Record 39." Thirty-five percent enter the system just prior to Milestone B, concluding that no further technology development is required. These are represented by the model artifacts "In Scope of existing CCD" and "Record 40." Sixty percent enter the system just after Milestone B to begin system development and demonstration. This is also marked by the model artifacts of "Entry after MS B" and "Record 41" (shown in Figure 62). Officially, the Milestone Decision Authority (MDA) is the one to authorize entry into the acquisition system at any point. Regardless of the outcome, there is tremendous institutional pressure to push the activity as far forward or ahead in the acquisition system as possible. These institutional pressures result from the desire to field a capability quickly, "save"

money by avoiding a long development cycle, and from the belief that the “system” takes too long following the regular process. The aforementioned percentages reflect the MDA’s deference to the operator’s desires. The source of this information is derived from various interviews with players involved in the overall process and was further validated by JCIDS participants.

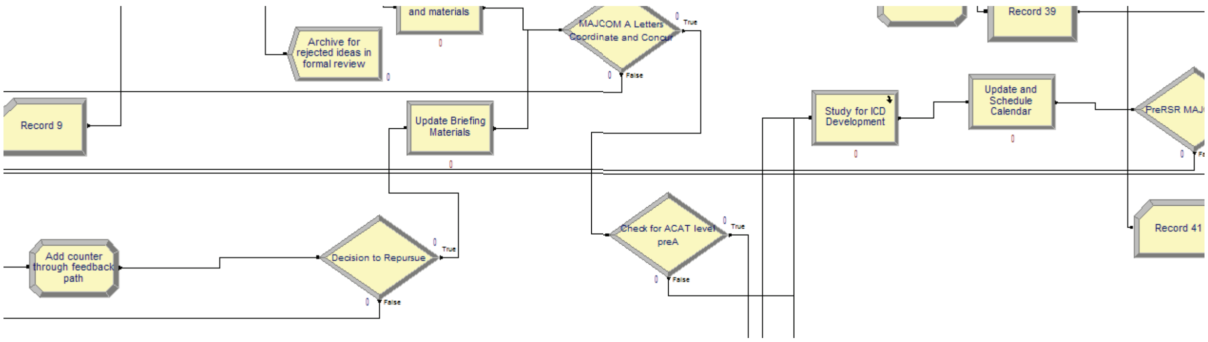


Figure 62: Close up of another portion of the early Pre-MS A requirement swim lane

Continuing the discussion on the decision of the MAJCOM “A” letters, if the decision of the “A” letters is to proceed, a check is made to determine the ACAT level of the program, called “Check for ACAT level preA” in the figure above. If it is an ACAT I potential program, an out-of-swim lane activity occurs in conjunction with the Budget swim lane (shown in Figure 63 and discussed later). If not, a study for the development of the ICD is done, called “Study for ICD development.” This is known in the documentation as the Analysis of Material Approaches and is the last step in an on-going process called the Functional Solution Analysis. This process is not evaluated in detail in the model and is an example of some of the preliminary activities that are simultaneously occurring outside of the scope of the model. For ACAT I type programs, the study length is 180 to 360 days, with a most likely value of 300 days. For the other ACAT programs, these last 1 to 7 days with 5 days being the most likely value. The funding for the studies of non-ACAT I programs, if required, comes out of the organization sponsoring the document. The “7-day” studies are typically conducted in-house by resident experts and technical contractor support personnel.

As shown in Figure 61 and 62, a task entitled “Update and schedule calendar” has a time distribution of 3 to 15 days, with a most likely value of 12 days. The source of this information is inference derived from interview data.

A decision point entitled “Pre-RSR MAJCOM A8” has a probability of 95%. The probability changes to 99% if this idea has been through the system before. The source of this information is an interview.

A task entitled "finalize RSR and calendar items" in Figure 61 has a time distribution of 21 to 35 days, with a most likely value of 28 days. The source of this information is from an interview and was later validated by a JCIDS participant and the official Document Timeline Calculator [152].

A decision point entitled "RSR Mr. Harry Disbrow HQ USAF A5R," Figure 61, has a probability of 98%. The source of this information is an interview. If the answer to this decision point is “no”, the process returns to the originator and another decision point is reached, entitled “Check value” in Figure 60.

The RSR must include the funding strategy for the pre-A and pre-B (Concept Refinement and Technology Development) phases. Note that it does not include a guarantee of funds – rather it is a strategy or best guess or promise to fund. This step is also when a program is given its Joint Potential Designator. ACAT I activities have a 100% chance of getting joint interest. ACAT II activities are usually designated as “joint information” and any comments are taken under advisement, while ACAT III activities are designated “independent” AF only and are distributed to the other services as a courtesy only for comment and review. The joint information was validated by an interviewee in A35 and the official Document Timeline Calculator.

Assuming this was a first time rejection by the RSR and clearing the model artifact checking for a failure flag, it then meets the model artifact entitled “Add counter through feedback path,” which was discussed earlier. The probability of the decision point “decision to pursue” is approximately 85%. If

successful, the next step is back to the MAJCOM "A" letters. If not, the item is killed and archived, with the model artifacts "Record 9," "End Simulation 8," and "Archive for rejected ideas in formal review", all discussed earlier and shown in Figure 60.

Returning to the process flow upon approval by the RSR, the next task is called "form high performance team" has a time distribution of approximately 30 to 45 days, with a most likely value of 41 days. The source of this information is an interview and validated by a JCIDS participant and the official Document Timeline Calculator.

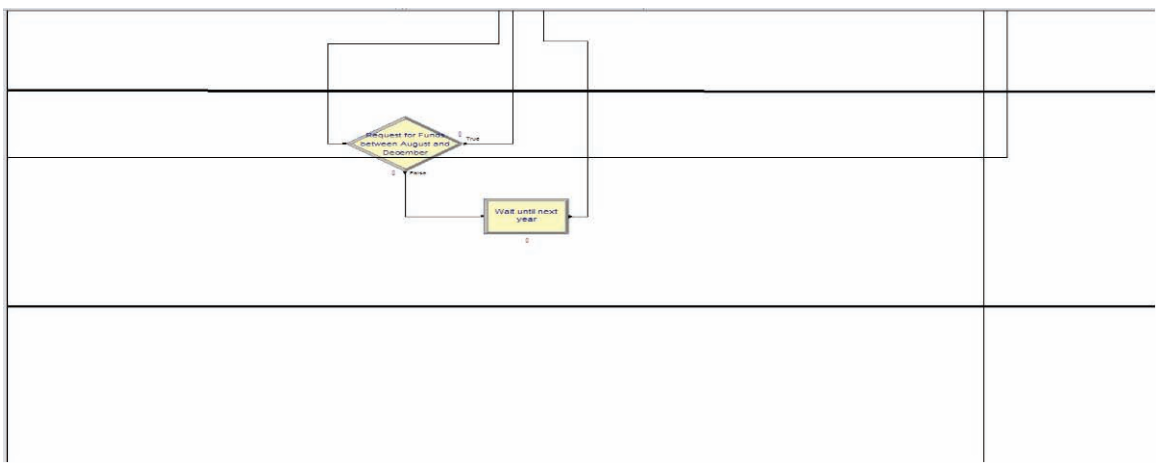


Figure 63: Pre-MS A early PPBE activity

If after the MAJCOM "A-letter" decision and the program is designated ACAT I, a decision point entitled "Request for funds between August and December?" is met. In some sense, this is an artificial necessity of the model to account for the limited resources that exist for concept development and to demonstrate the effects of timing upon certain development activities. In reality, this "check for funds" occurs simultaneously during the development of an idea prior to the "A-letter" decision. They can still approve the activity contingent upon the availability of funds. The probability of answering affirmative to this query is 70%. If not, the task, "wait until next year" does just that, with a time distribution of 180 to 270 days, with 250 days as the most likely value. This distribution allows for fall-out moneys to jumpstart a program. The source of this information is by inference and has been validated by a JCIDS

participant. Since funding for an entirely new idea will come out of the yearly appropriated yet un-definitized[60] budget for “Advanced Concepts” there is likely some informal coordination occurring prior to the initiation of these out of swim-lane steps. There will be some sort of ranking criteria, either via analysis or FIFO, etc., to fund these requests. Therefore, if the answer is “no”, the process task moves to the bottom of the “list” and “waits until next year.”

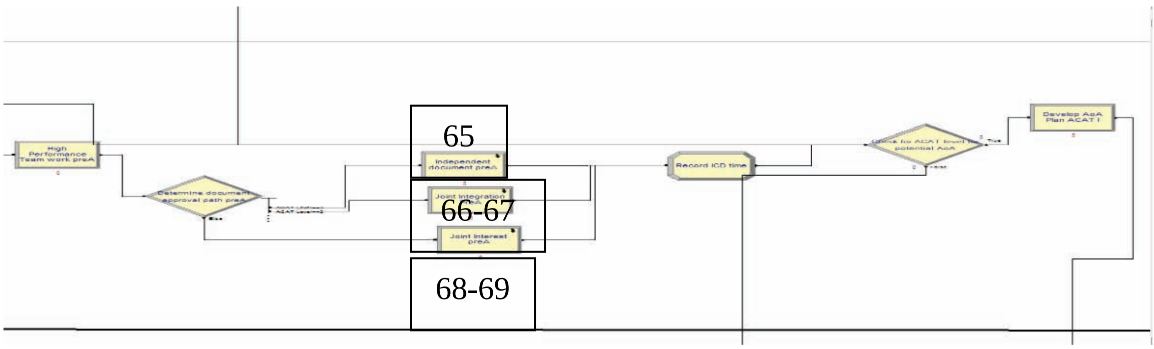


Figure 64: Pre-MS A close up of JCIDS process for ICD Development

The task called “High-Performance Team (HPT) work" in Figure 64 has a time distribution of 5 to 7 days, with a most likely value of 6 days. The source of this information is an interview with a JDICS participant. The product of this event is a “draft document”. Since members of the Acquisition swim lane are part of the HPT, this serves as the informal trigger for advance Acquisition activities to occur as described later in this document. This is not explicitly modeled here. At this point, a decision point entitled “Determine document approval path preA” separates the activity into three separate paths to approval depending upon the Joint Potential Designator, e.g. a “rough” surrogate for the ACAT level, of the activity. The model separates these based on the previously designated ACAT level. ACAT I programs go to the “Joint Interest preA” step. ACAT II programs go to the “Joint Integration preA” step and ACAT III programs go to the “Independent Document preA” step. More detail is given in the table below.

[60] Undefinitized – refers to a budget where the specific spending items and priorities have not yet been established.

	JROC Interest			Joint Integration			Joint Information Independent		
	ACAT I	ACAT II	ACAT III	ACAT I	ACAT II	ACAT III	ACAT I	ACAT II	ACAT III
Air Force Validation	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC	AFROCC
Joint Staff Validation	JROC	JROC	JROC						
Joint Staff Approval	JROC	JROC	JROC						
AF Approval				CSAF	A3/5	AF/A5R	CSAF	A3/5	AF/A5R

Table 52: Approval Authority level for JCIDS documents based on ACAT level

Following the completion of these steps, which will be discussed in detail shortly, the ICD completion time is recorded as an artifact of the model with the step, "Record ICD time," and a check point for ACAT level is met by the programs. ACAT II or III programs proceed to a PPBE activity, while ACAT I programs begin the process titled, "Develop AoA Plan ACAT I." This activity has a process duration of 60 to 90 days with a most likely value of 75 days. This step was validated by official documentation and JCIDS participants.

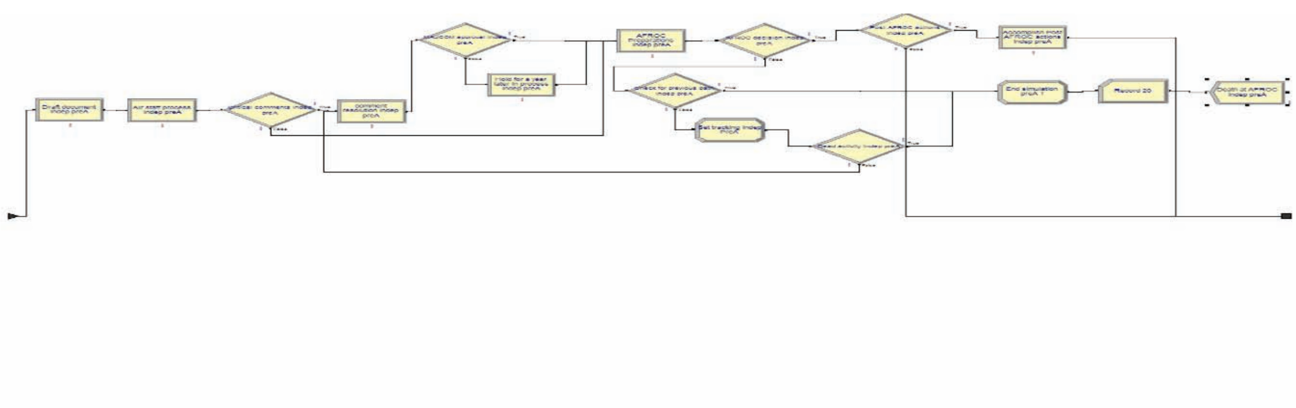


Figure 65: Pre MS-A Independent document process

The task called "Draft document Indep preA" has a time distribution of 30 to 60 days, with a most likely value of 55 days and is really an "advanced" draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participants as well as by the official Document

Timeline Calculator. In reality, at this point, information is passed to the acquisition system for preparatory work.

The task called "air staff processes" has a time distribution of 21 to 42 days, with a most likely value of 29 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review (with the possibility of an extension) form the basis of the time distribution. The information was later validated by a JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments Indep PreA?" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "comment resolution indep preA" has a time distribution of 15 to 45 days, with a most likely value of 45 days. This is where the sponsor resolves O-6[61] level comments. The source of this information is interview and validation by JCID participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval indep preA?" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This is represented by the step, "Hold for a year later in process Indep preA." It has a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

[61] O-6: refers to a Colonel or Captain (for the Navy).

The task called “AFROC preparations Indep preA” has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision indep preA” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish, see step “Post AFROC actions Indep preA” and must return to the AFROC within 0 to 15 days, with a most likely value of 11 days. The source is the official Document Timeline Calculator.

If the initial answer at the AFROC is “no,” there is a 99% chance the activity is “dead” and the document is archived. First, there is a check to see if the rejection is the first time or not. This is done at the step entitled, “Check for previous path indep PreA.” The model sets a variable in “Set tracking Indep PreA.” The next step is “Dead activity Indep PreA.” This step has a probability of 99% being killed. If not, the program goes back to the step “comment resolution Indep PreA.” During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. Therefore, the path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. Otherwise, the activity is “dead” and this is represented by the model artifacts “End Simulation PreA 1,” “Record 20,” and “Death at AFROC Indep PreA.” The source of this information is an interview as well as review of official process documents. It has been validated by a JCIDS participant.

At this point the ICD is approved and resumes the normal flow in the combined process, as depicted in Figure 64.

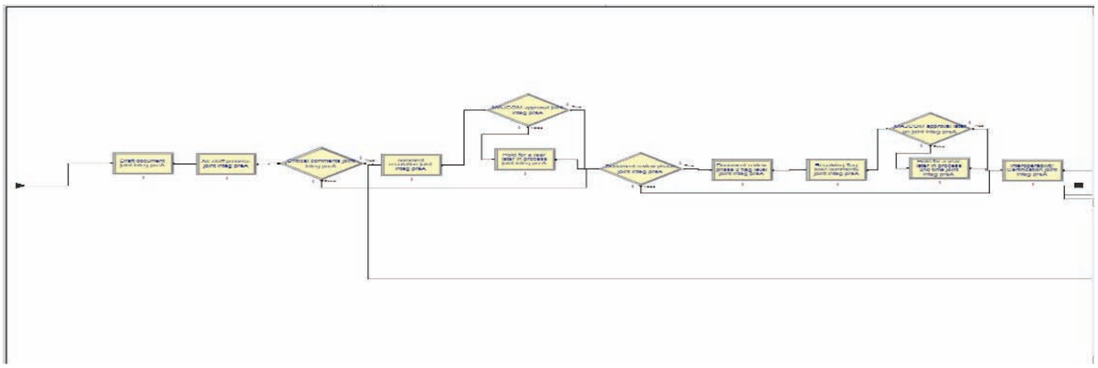


Figure 66: Pre-MS A Joint Integration document process, part I

The task called "draft document joint integ preA" has a time distribution of 30 to 60 days, with a most likely value of 55 days. This is really an “advanced” draft of the document previously worked on by the High Performance team. It is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document Timeline Calculator. In reality, information is passed to the acquisition system for preparatory work.

The task called "air staff processes joint integ preA” has a time distribution of 21 to 42 days with a most likely value of 29 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review (with the possibility of an extension) form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments joint integ preA" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the “Document review phase joint integ preA.”

The task called "comment resolution joint integ preA" has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval joint integ preA?" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is entitled "Hold for a year later in process joint integ preA" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The step "Document review phase joint integ preA" is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Interoperability Certification step. The next step, for those that require it, is called the "Document Review Phase 2 Flag level joint integ preA". This activity is taking place because there were "critical comments" that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 34 days. This has been validated by the Official Document Timeline Calculator.

The next step is another round of the sponsor "Resolving Flag Level Comments joint integ preA." The time distribution is 15 to 30 days, with a most likely value of 28 days. This was validated by the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval joint integ preA" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is titled "Hold for a year later in process 2nd time joint integ preA." This step has a time distribution of 270

to 300 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step. This step was validated by the official Document Timeline Calculator.

The step called “Interoperability Certification joint integ preA” has a time distribution of 10 to 20 days, with a most likely value of 15 days. The validation came from the official Document Timeline Calculator.

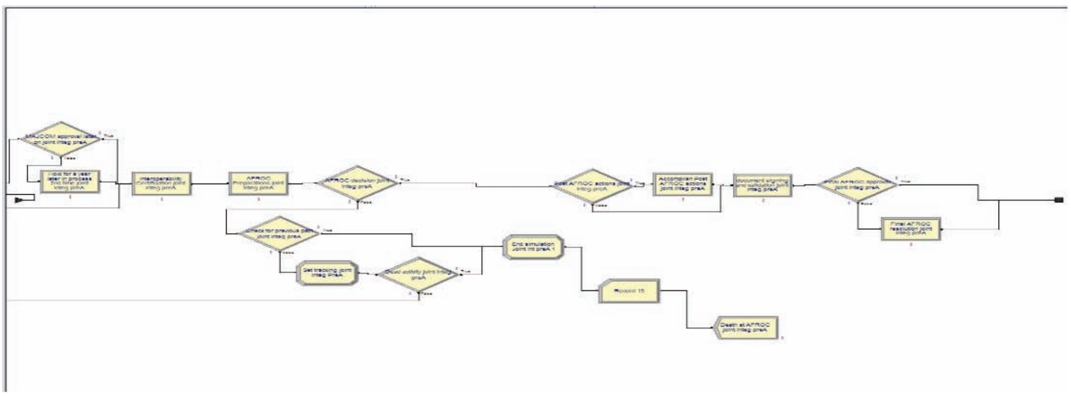


Figure 67: Pre-MS A Joint Integration document process, part II

The task called “AFROC preparations joint integ preA” has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision joint integ” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish. This possibility is called “Post AFROC actions joint integ preA.” The step “Accomplish Post AFROC actions joint integ preA” includes returning to the AFROC within 0 to 15 days, with a most likely value of 11 days. If the initial answer at the AFROC decision is “no,” there is a 99% chance the activity is “dead” and the document is archived. During validation of the model, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. For the logic of the model to remain intact, the program is first

checked to see if it has previously been rejected. If not, a variable is set. Then it meets the step “Dead activity joint integ preA” with a 99% probability of being killed outright. If not, it is then set back to the comment resolution step. Otherwise, the program is killed via the model artifacts “End Simulation Joint Int preA 1,” “Record 19,” and “Death at AFROC joint integ preA.” The source of this information is an interview, the official Document Timeline Calculator as well as review of official process documents. It has been validated by JCIDS participant.

The step “Document signing and validation joint integ preA” is because the AFROC then requires 14 to 30 days, with a most likely value of 26 days, to get the document signed and validated across the AF structure. The step “Final AFROC approval joint integ preA” has a 99% chance to be approved by the AFROC without issues. The remaining 1% have issues requiring resolution, e.g. step “Final AFROC resolution joint integ preA,” typically requiring 42 to 60 days to resolve, with a most likely value of 48 days.

At this point the ICD is approved and re-enters the process flow as depicted in Figure 64.

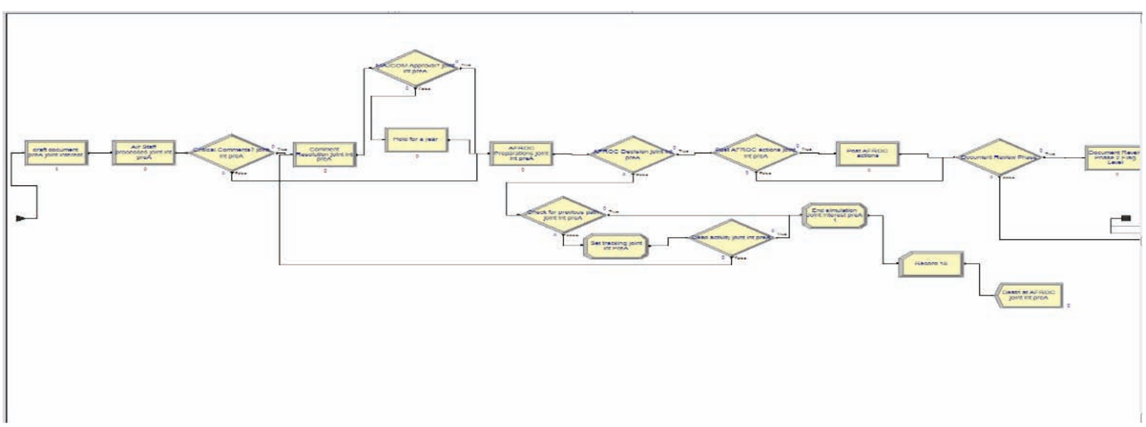


Figure 68: Pre-MS A Joint Interest document process, part I

The task called "draft document preA joint interest" has a time distribution of 30 to 60 days, with a most likely value of 55 days. It is really an “advanced” draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document

Timeline Calculator. Information is also passed to the acquisition system for preparatory work, but is not done explicitly in this model.

The task called "air staff processes joint int preA" has a time distribution of 21 to 42 days, with a most likely value of 25 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review, with the possibility of an extension, form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "critical comments? Joint int preA" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "Comment resolution joint int preA" has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval? Joint int preA" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is "no," the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This is represented by the step "hold for a year" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The task called "AFROC preparations joint int preA" has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision joint int preA” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish. This is represented by “Post AFROC actions joint int preA.” Those programs with actions to accomplish, e.g. “Post AFROC actions” must return to the AFROC. It has a time distribution of 0 to 15 days, with a most likely value of 11 days. If the initial answer is “no,” there is a 99% chance the activity is “dead” and the document is archived. During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. This is represented by first checking to see if the program had been rejected at the AFROC before. If not, a flag was set, e.g. “Set tracking point int preA.” Then the decision point, “Dead Activity joint int preA” has a 99% probability that the program would be killed anyway. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. The source of this information is an interview as well as review of official process documents. It has been validated by JCIDS participant.

The next step is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Functional Capabilities Board. This is called the “Document Review Phase 2 Flag level.” This activity is taking place because there were “critical comments” that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 38 days. This has been validated by the Official Document Timeline Calculator.

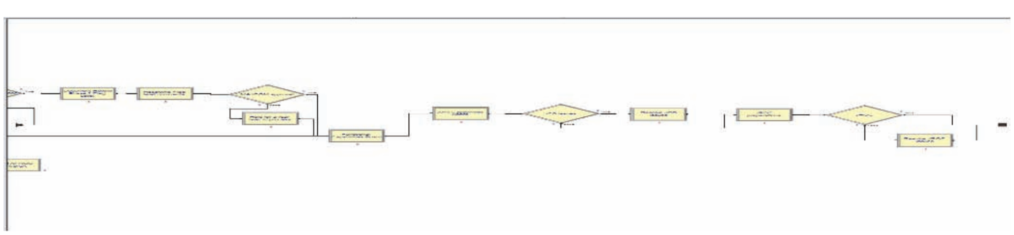


Figure 69: Pre-MS A Joint Interest document process, part II

The next step is another round of the sponsor "Resolving Flag Level Comments." The time distribution is 15 to 30 days, with a most likely value of 27 days. This was validated by the official Document Timeline Calculator.

The decision point entitled "MAJCOM, approval?" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is called "Hold for a year later in process" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

Next is the "Functional Capabilities Board" for preparation and validation. This step has a time distribution of 7 to 21 days, with a most likely value of 14 days. This is considered a very difficult "scrub" of the activity. The model is programmed to assume all documents proceed without problem to the next step[62]. This step was validated by JCIDS participant, A5 participant, and the official Document Timeline Calculator.

The Joint Capabilities Board requires another 7 to 21 days in preparation after the FCB, with a most likely value of 14 days. Following this is logic, titled "JCB issues," where 85% that meet the JCB board go on to the next step. The remaining 15% have issues to resolve, titled "Resolve JCB issues," typically taking 10 to 20 days, with a most likely value of 15 days, before reporting back to the JCB.

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[62] Unfortunately, this is not the case. This error was discovered while preparing this dissertation for publication. The actual data is that 70% that meet the board go on to the next step. The other 30% have issues to resolve, typically taking 10 to 20 days, with the most likely value of 15 days before reporting back to the FCB. However, the likelihood of another set of issues arising is so remote that it is assumed to have a probability of zero. Given that the magnitude of this error is on the order of a handful of days versus the end result on the order of thousands of days, it is judged that the overall results in the dissertation are still valid.

However, the likelihood of another set of issues arising at the second meeting of the JCB is so remote that the model does not consider it at all.

The JROC requires 14 to 30 days, with a most likely value of 25 days, in preparations, e.g. mostly calendar scheduling issues, as noted in the step titled, “JROC Preparations.” At the decision point “JROC,” 98% are approved without issues. The remaining 2% have issues requiring resolution, typically requiring 42 to 60 days to resolve, with a most likely value of 51 days, as shown in the process step “Resolve JROC issues.”

At this point the ICD is approved and the program resumes the process flow as depicted in Figure 64.

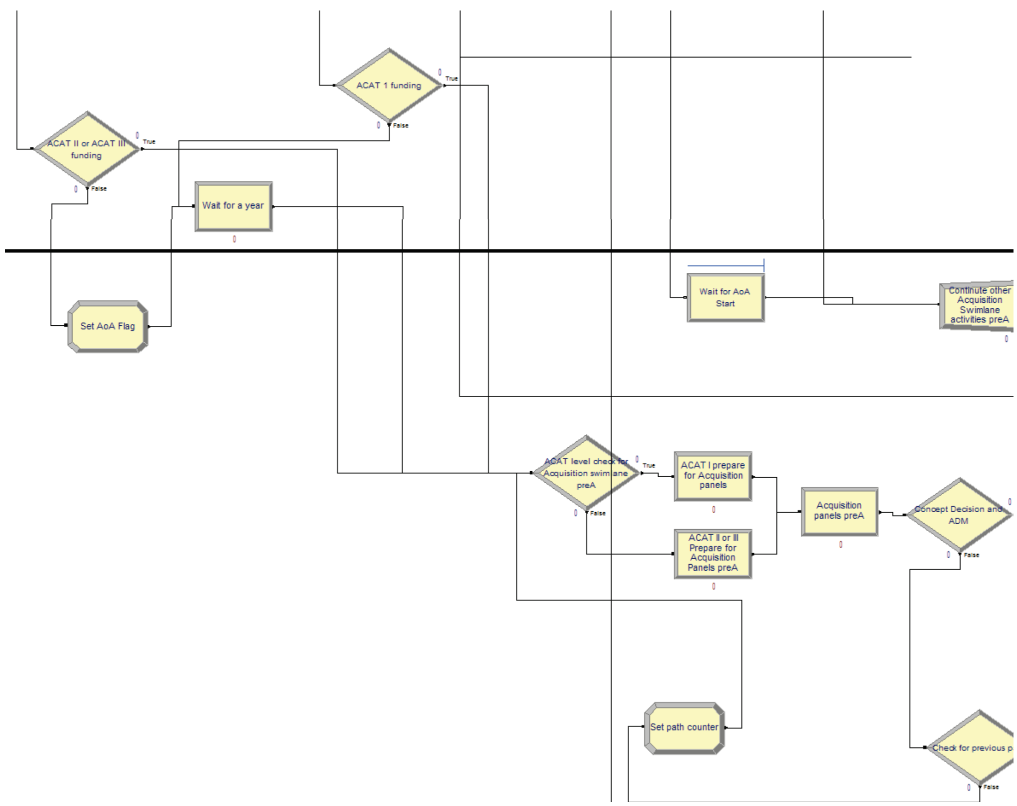

Figure 70: Pre-MS A PPBE and early Acquisition activities

Following the RSR, the Requirements process must determine if it wants to proceed further in developing the concept. A “waiting period for moneys to become properly aligned” is encountered at this point. It requires an out-of-swim lane activity in conjunction with the Budget swim lane. In reality,

this "check for funds" occurs simultaneously during the build-up to the approval of the ICD. The probability of answering affirmative to this query is 70% for ACAT I designations, titled "ACAT I funding." For ACAT II or III, titled "ACAT II or ACAT III funding," the availability is 99%. Much of this difference is based on the approach of the sponsoring command. Money for studies is highly dependent upon the overall cost and scope of the activity. For an ACAT II or III, the cost of an Analysis of Alternatives may be greater than the cost of the whole activity. This boils down to a judgment call on the part of the sponsoring organization and is captured in the percentages cited. If the "check for funds" is not successful, the task, "Wait for a year" does just that, with a time distribution of 180 to 270 days, with a most likely value of 250 days. This range allows for fall-out moneys to be obtained earlier than a year to jumpstart a program. Furthermore, these percentages are due to the fact that an Analysis of Alternatives is required for anything that is an ACAT I. ACAT II or ACAT III activities are only required if the Milestone Decision Authority "directs one" to be done. The source of this information is by inference and validation.

The same time the "check for funds" is taking place, another activity is done simultaneously, although the model shows this task being done serially. This is an out of swim-lane activity where the MDA examines the approved ICD and determines the criteria for the AOAs for ACAT I programs and 1% of ACAT II and ACAT III activities. The model takes the 1% of ACAT II and ACAT III programs that do not have sufficient funds and are placed on the "wait a year" path and sets a flag to do the AOA. This is a reasonable assumption as AOAs tend to be expensive and would like not have sufficient funds to conduct a full-blown AOA without seeking additional moneys. Normally, this decision would come out of the Acquisition Panel activities that are happening in parallel to the events in the Requirements swim lane.

Next, the programs are split between ACAT I and all other ACAT levels, e.g. see "ACAT level check for Acquisition swim lane preA," to make preparations for the Acquisition panels. The task "ACAT

I prepare for Acquisition panels" has a time distribution of 40 to 60 days, with a most likely value of 55 days. This was validated by A35.

Upon completion of this process, a process called "Acquisition Panels" has a time distribution of 15 to 35 days, with a most likely value of 30 days. The source for this information comes from interviews and published timelines and documents.

Next, the decision point, "Concept Decision and ADM," is met. It has a 99% probability of approval. If "yes", an Acquisition Decision Memorandum is issued. The ADM "officially starts the acquisition process and documents the results of the Concept Decision" per AFI 63-101. The concept decision contains "descriptions of the responsibilities of each organization, the funding source, and the actions necessary to prepare for Milestone A" per AFI 63-101, pg 41. The MDA examines the approved ICD and sets and outlines criteria for the AOAs for ACAT I programs and 1% of ACAT II and ACAT III activities, as described earlier. If the concept decision is refused, a check is made to see if it had been denied before. If so, the program is ended and recorded via the model artifacts of "End Simulation 7," "Record 6," and "Kill by MDA at Concept Decision" (not shown above). If not, a flag is set to indicate the failure of the program at the concept decision and it goes back into the acquisition panel process for another attempt.

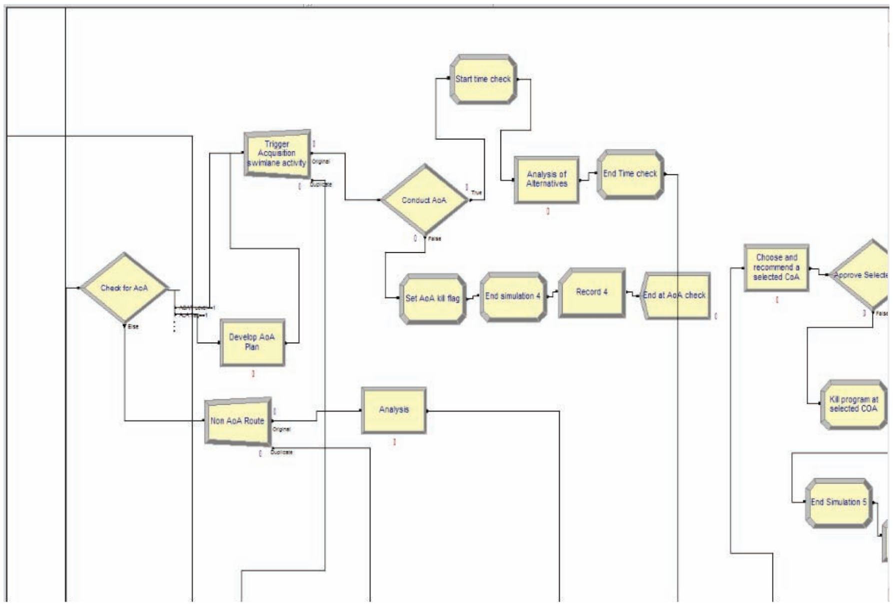

Figure 71: Pre-MS A AOA activities

Upon favorable completion of the Concept Decision step, the model checks to see if an AOA is required, e.g. “Check for AOA.” If the program is an ACAT I, it has already completed the step. If a flag was attached to an ACAT II or III program, it must complete the step, “Develop AOA plan,” which has a time distribution of 60 to 90 days, with a most likely value of 75 days. For purposes of simplicity, the entire planning process and approvals required for the AOA activity, including a visit to the AFROC for validation) have been combined into this activity. The shortened length acknowledges that much of the work required builds upon the ICD and other studies as well as much of this being done in parallel with the ICD development and approval process.

At this point, during the execution of the AOA or the mini-study, the model requires the flow to be split in order to allow parallel processing of activities. This occurs at the “Trigger Acquisition swim lane activity” and at the “Non AOA Route” splitting functions. One flow remains in the requirements swim lane and the other flow proceeds to the acquisition swim lane. This is a necessary artifact of the model required for correct operation.

For non-AOA programs, an “Analysis” step or mini-study is completed. This step has a time distribution of 2 to 180 days, with a most likely value of 7 days. This information came out during the validation process, when it was described that most analysis activities were done on the “back of an envelope” for most programs. From AFI10-601, the statement is “The analytic effort should be commensurate with the overall program cost.”

The decision point “conduct AOA” has a probability of 99% at this point. The 1% other outcome reflects an end to the process because, in reality, the activity will be restructured differently, e.g. to be less expensive, less ambitious, etc., and will go through the entire process again. This outcome is reflected in the model artifacts “Set AOA kill flag,” “End Simulation 4,” “Record 4,” and “End at AOA check.” This decision point is also an artifact of the model to account for real-world contingencies that may cause money to be expected or promised but not arriving. The source of this information is based on interviews. Since the funding comes out of the yearly appropriated yet vaguely definitized budget for “Advanced Concepts” and since this office is close to the requirements organization, there is likely some informal coordination occurring prior to the initiation of the overall process. This was discussed prior in the PPBE elements in Figure 70. There is some kind of ranking criteria, e.g. either via analysis or FIFO, etc., to fund these requests.

If the answer to conduct the AOA is “yes”, after a time check is conducted, the task “Analysis of Alternatives” is met. The time distribution for the AOA is 270 days to 730 days, with a most likely value of 600 days. The AOA will determine performance, schedule, and cost expectations for the program. Afterwhich, another time check is performed to determine the actual AOA duration, as an artifact of the model. This information has been validated by JCIDS participant.

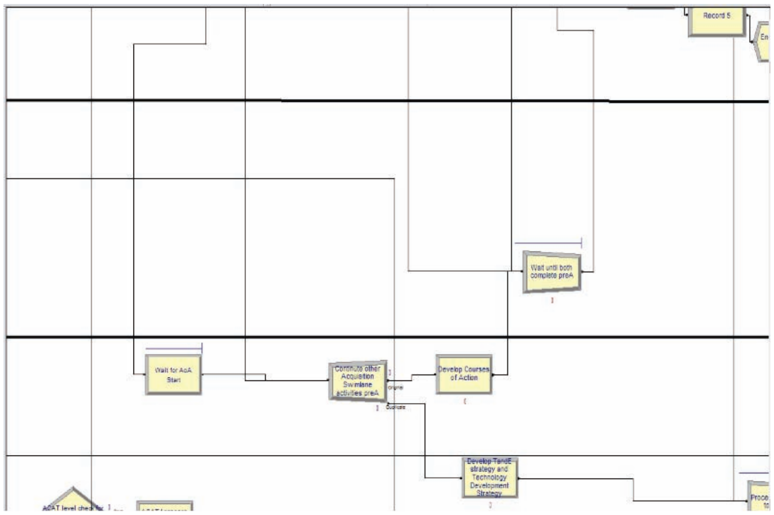

Figure 72: Pre-MS A Acquisition activities parallel to AOA

From the split off of the AOA activities, the ACAT I split goes to a queue entitled, “Wait for AOA start.” When the AOA is started, the program is released from the queue. This is an artifact of the model required to mimic real-world behavior. All of the ACAT programs that were split off of the AOA activities enter the “Continue with other Acquisition Swim lane activities preA” in order to continue other important parallel processing required for the model to execute correctly.

On one flow, the acquisition swim lane begins work known as “Develop Courses of Action” with a time distribution of 30 to 180 days, with a most likely value of 160 days. Sometimes the time required is often a measure of the “novelty factor” of the program as opposed to the ACAT level. This would be a possible future work extension of the model. The “purpose of the COA is to present the operational MAJCOM commander with acquisition strategy options for the selected materiel solution resulting from the AOAs” or other studies/analyses per AFI 63-101. For the non-AOA programs, this step takes place upon completion of the additional analyses done in the Requirements swim lane. The COA serves “as the basis for the Acquisition Strategy, TDS, T&E strategy, LCMP and EMA” per AFI 63-101.

Several other activities also occur in parallel and will be discussed only in generalities. For instance, the formation of an Integrated Test Team takes place during this time as well and does its work in parallel with COA development.

In the parallel process flow, the next step is the development of both the T&E strategy (done by the Integrated Test Team (ITT)) and the Technology Development Strategy. It is a plan to assess the maturity and viability of technologies being considered in the “development of phase capabilities requirements” per AFI 63-101. This step is “Develop T&E strategy and Technology Development Strategy.” It has a time distribution for this task is 30 to 180 days, with a most likely value of 150 days. This was validated by participants in SAF/AQ and A35. The time required is often a measure of the “novelty factor” of the program as opposed to the ACAT level. This is another possible future work extension of the model.

It is important to note several items that are not germane to the level of resolution of this part of the model or the calculation of time elapsed. Throughout this process, the PM is responsible to ensure that his obligations and expenditures are OK. The contractors used in this effort are typically accounted for through a “level of effort” contract effort. The moneys involved are always subject to cuts and other uncertainties. In this scenario, when this happens, the quality of the effort diminishes, but the timeline does not change. A possible future work extension of the model would be to investigate quality settings. When moneys do impact the schedule, three factors play into resolving the issue: the amount of money, e.g. more money needed equals more time required; the timing of the request, e.g. where in the POM cycle does the request come; and the ACAT level of the program, e.g. higher level equals a faster response, whereas a lower level takes longer.

Upon completion of these steps a “Preferred System Concept” emerges. It is the sum total of all previous efforts, e.g. the AOA materiel preferred solution, acquisition strategy, T&E plan, TDS, etc.

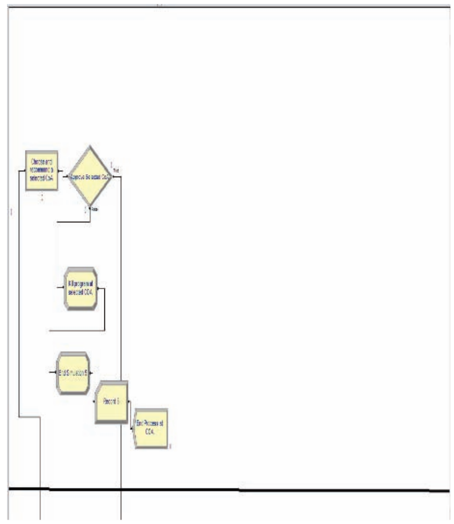

Figure 73: Pre-MS A COA approval processes

Another way to describe the emergence of the preferred system concept is when the MAJCOM "Chooses and recommends a selected COA" as its next task. The process for the MAJCOM to do so requires 30 to 90 days, with a most likely duration of 60 days. Together, the MAJCOM commander, and theoretically, the MDA, will jointly approve the COA 99% of the time. 1% will be rejected and the process will end via the model artifacts of "Kill program at selected COA," "End Simulation 5," "Record 5," and "End Process at COA." Information obtained and validated from official documents and JCIDS participant.

The requirements portion of the swim lane ends to await the Acquisition swim lane finishing their activities and the declaration of the MDA of accepting the MAJCOM's preferred COA and the approval of the acquisition strategy and plans. When the MAJCOM approves the selected COA, this represents the initial Cost, Schedule, and Performance baseline for the program, although it is not counted as the program's official "start".

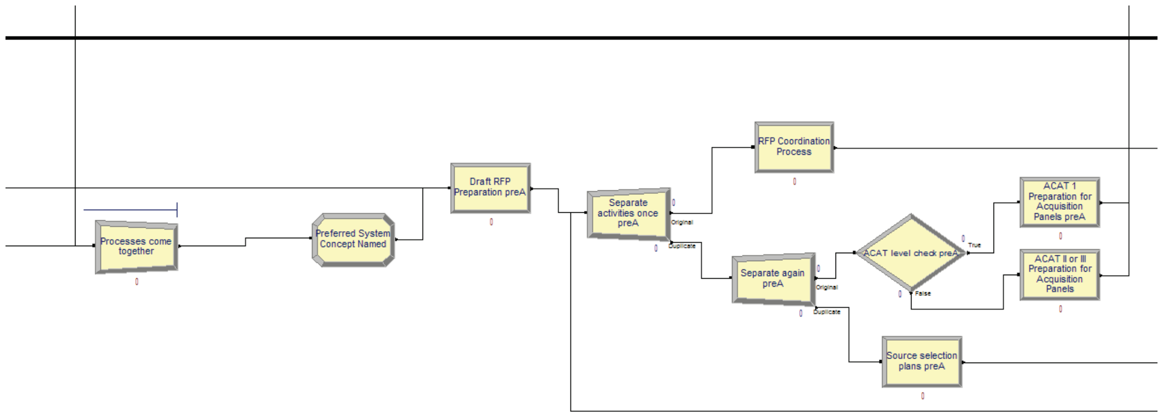

Figure 74: Pre-MS A Acquisition swim lane after COA selection

From the COA decision and also the T&E strategy tasks, the model waits until both are complete at "Processes come together." Afterward the "Preferred System Concept is Named." Next, the "Draft RFP Preparation preA" step is met. The process task, "Draft RFP Preparation PreA" has a time distribution of 10 to 20 days, with a most likely value of 17 days. Typically there is some effort to waive the requirement for all of the preferred system concept items and preliminary results will be used, especially if trying to meet a "target" MS A date goal, but for purposes of model simplicity, this behavior will not be modeled. The source of this information is experience and source documents. Outputs from this step go to three different tasks, handled via the "Separate activities once preA" and "Separate again PreA," with one path going to the "RFP coordination process," another to the development of the "Source Selection plans preA," and the other to preparations related to acquisition panels.

The process task called "RFP coordination process" has a time distribution of 25 to 50 days, with a most likely value of 45 days. Some of this coordination is done within the branch of service doing the acquisition and some of it is done with industry. The source of this information is interviews, experience and source documents.

Another process task, "Source selection plans preA" has a time distribution of 30 to 65 days, with a most likely value of 60 days. This time distribution is influenced by the current state of the

contractor's work which is being taken into consideration for the final requirements that will be part of the future contracting effort. The source of this information is experience and published timelines.

The process task called "Preparation for Acquisition Panels" has a time distribution of 40 to 60 days for ACAT I programs, with a most likely value of 56 days. For ACAT II and III programs, expect a time distribution of 15 to 30 days, with a most likely value of 25 days. The majority of this time is to get in synchronization with the fixed calendar of these panels. Most of the "work" has already been done prior to this time and in previous tasks. The source of this information is an interview and source documents.

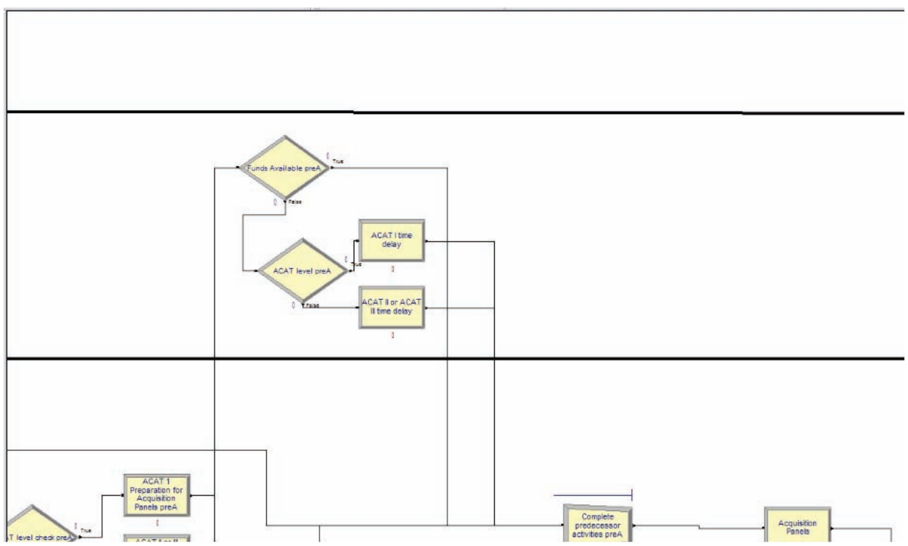

Figure 75: Pre-MS A final funding check prior to MS A approval

An artificial artifact of the model is inserted here to check for funding. This is in reality an on-going process, but is inserted here as it is a necessary requirement before proceeding to the Acquisition Panels. This decision point is entitled "Funds available PreA" This step reflects the fact that moneys for additional development of the concept are not guaranteed because they haven't been formally budgeted as a separate line item. The probability of this point is 75%. The reason this probability is high is that the AF has already committed to Milestone A and some anticipation is building over the

development of the concept. Further, since the moneys for this phase still are controlled by the same organization that funded the pre-MS A work, there is going to be some priority given to funding and completing the concept development.

If there are not funds available, there is a check made to see what kind of ACAT level the program is at. Then there is a task to wait until funds are available. This has a time distribution dependent upon the ACAT level of the program. For ACAT I programs, the "ACAT I time delay" has a distribution of 30 to 180 days, with a most likely value of 45 days. For the "ACAT II or ACAT III time delay," a time distribution of 90 to 240 days, with a most likely value of 150 days is encountered. Again, this distribution is given because of the various sources of money that can be used or tapped as occasion warrants as well as depending upon the time of the year, the amount of money required, etc.

After these activities have completed, all of the separated functions come back together. In order for this step to occur, the "RFP coordination process" and "source selection plans" must also be completed. The task will not start until all predecessor activities are done. This is an artificial queue titled "Complete predecessor activities preA." It allows processes to finish at different times, but waits until all are completed before the program is allowed to proceed further.

The process task entitled "Acquisition Panels" has a time distribution of 15 to 35 days, with a most likely value of 30 days. The time distribution allows for delays and resolution of last minute issues in these events. Validation for this activity is from official documentation.

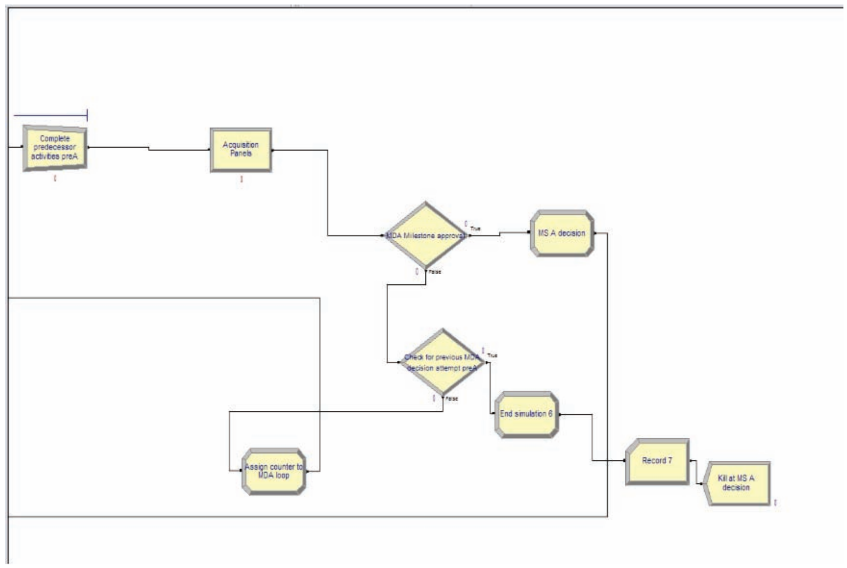

Figure 76: Pre-MS A Milestone Decision activity

A decision point entitled “MDA Milestone approval” has a probability of 99%. This probability relies upon the confluence of all previous tasks preparing for the next phase of acquisition development. The source of this information is official documents and interviews. If “no”, the process returns to the “Preparation for Acquisition Panels” step to repeat the process. If it is rejected twice, the process ends. In essence, the sponsoring MAJCOM will withdraw its support/funding and/or restructure the program – going back to the beginning. This is accomplished by first checking to see if a previous milestone decision was attempted. If not, a counter is set and the program returns to the task of preparing for the acquisition panels and repeats of those required activities. If it has been rejected twice, the program is killed via the model artifacts of “End Simulation 6,” “Record 7,” and “Kill at MS A decision.”

If approved by the MDA, Milestone “A” is declared at this point. The “program” contains all of the information, approval, and consent required to proceed to the next phase of activity.

A Few Final Comments about Acquisition Activities in the Pre-MS A Swim Lane

The acquisition swim lane attempts to model the acquisition process for acquisition programs. Among the different swim lanes in this model, it is by far the most studied in its workings and outcomes. It is also subject to the most scrutiny by outside parties trying to discern what is “wrong” with the

system and what to recommend as changes to be in the better interests of the taxpayer. Not every acquisition function is modeled or identified, rather, the focus of this model is to capture the events that effect the cost and/or schedule outcomes of projects.

It is possible that to an outside observer the Pre-MS A Requirements Swim Lane "Analysis" task seems to duplicate acquisition system functions. This is true in many respects. However, this is how the system has been defined.

The initial steps for acquisition in this stage are somewhat vague, but have been defined as clearly as possible. Furthermore, during the Analysis of Material Approaches that happens during the Requirements Phase, personnel from Acquisition are involved at lower levels of responsibility. These are typically "experts" working in the Advanced Concepts or Future Capabilities offices located within the Air Force's Materiel Command. Only when an activity looks like there is going to be long-term development forthcoming does the "system" kick-in to gear.

The first definable step, although not explicit in the model, occurs immediately after the RSR in the Requirements Swim Lane. At this time, the Air Force is supposed to appoint a Milestone Decision Authority (MDA). Upon completion of the ICD, the MDA will appoint a PM responsible until the program is officially established at MS B. However, at this time, there is no "program office" established and relies upon other offices for staff, etc.

Upon completion of the AOA Plan and receipt of the ICD, the next major defined step is entitled "Prepare for Acquisition Panels," as discussed earlier. This task is not able to begin until an approved Initial Concept Document (ICD) is available from the requirements swim lane. Undoubtedly, some advance work is done through the efforts of those acquisition personnel participating on the High-Performance Team. But for purposes of the model, we are only concerned with the major drivers to system outcomes. Therefore, many activities will remain undocumented. As mentioned, these efforts will be usually done by an organization known as an advanced concepts group whose sole purpose is to

"nurse" these projects/ideas along until they obtain the status of a full program and it's own separate program office.

The Contractor Pre-MS A Swim Lane

The contractor portion of Pre-MS A is not used in the model but that does not mean no contractors were involved. On the contrary, contractors working directly for the MAJCOM conducted the AOA or other studies as well as numerous technical support contractors worked for the PM in developing strategies, courses of action, etc. The uncertainties of contract management and other risks are already incorporated in the time distributions and probabilities of the other components of the model in this pre-A phase.

The Pre-Milestone B Swim Lanes

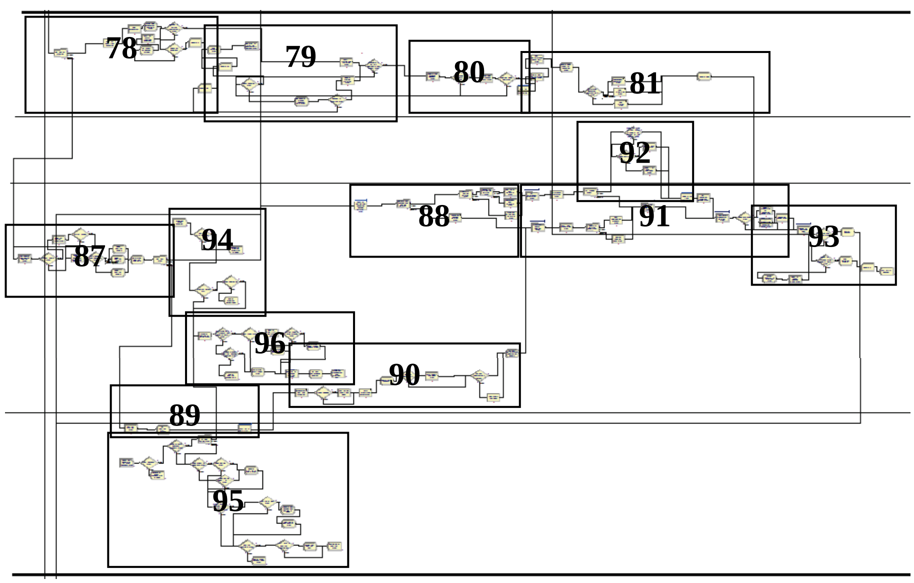

Figure 77: Pre-MS B Swim Lanes with Reference Figures

This phase represents all of the Pre-MS B activities in all four swim lanes: Requirements; PPBE; acquisition; and contractors. The notations on the figure above indicate which figure to refer to in order to get detailed model information on specific sections of the model. The detailed explanation for the content within the figure will immediately follow the figure.

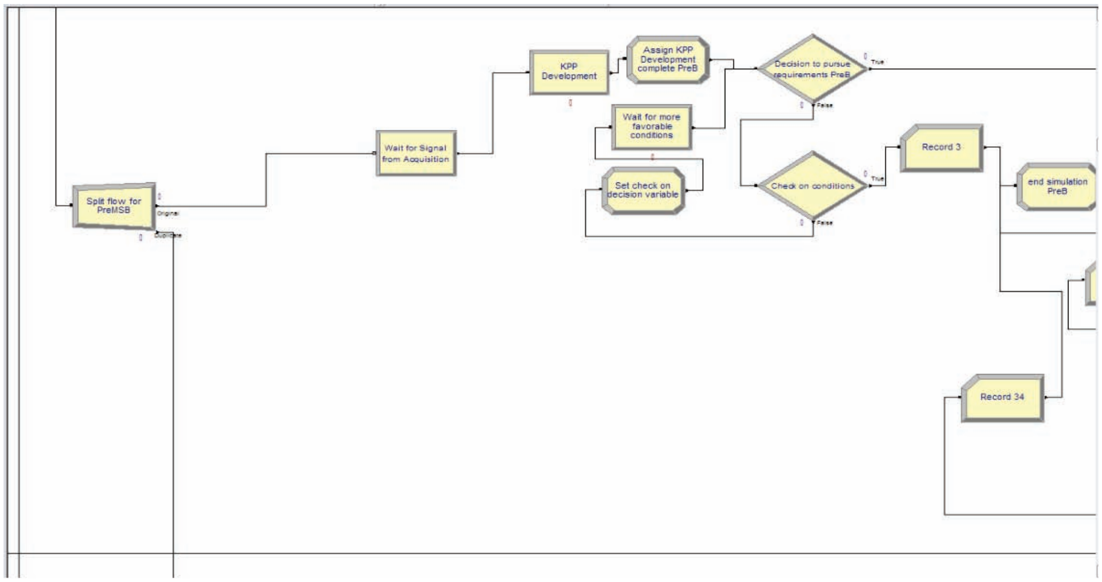

Figure 78: Pre-MS B Early Requirements Swim Lane

The first step coming after MS A is an artifact of the model, a separation of programs that will allow parallel processing in the requirements swim lane and the acquisition swim lane. The next step is "Wait for Signal from Acquisition." This step is important as it serves as a time delay, waiting for the acquisition system to award a contract. After the contract is awarded, the other activities of the swim lane may begin. For practical purposes, this merely acknowledges the need for the requirements system to ascertain the direction of the program in development.

The first process task of this swim lane is entitled "KPP Development" with a time distribution ranging from the amount of time equal to 65% of the Technology Development original contract length to 75% of the Technology Development original contract length, with the most likely amount being 72% of the Technology Development original contract length. The task starts at roughly the same time the contract is awarded. The inputs to this task are the AOA results, the preferred system concept information and also some other preliminary results from Acquisition. The source for this information is from interviews and was validated by JCIDS participant.

At the Milestone A decision, the MDA may also direct another AOA to be conducted to update or correct the previous AOA results, taking into account any factors that may have changed during the

preceding phase. The probability of this occurring is unknown at this time, however, for purposes of this model, the time to complete the AOA is less than the KPP Development task and is therefore inconsequential to the overall task. Any results of the AOA will be folded into the KPP Development activity.

An artifact of the model will set a variable to signal when the KPP development was complete follows this task and will be used later within the acquisition swim lane to permit another process task to proceed.

A decision point entitled "decision to pursue requirements PreB" has a probability of 98%. The ultimate purpose of starting this process is to end with an approved Concept Capability Document, CCD. The reason for the high probability is that the MDA has an agreement with the MAJCOM-sponsoring commander to pursue Milestone B and acquisition activity is already taking place. The organizational momentum is difficult to stop. The source of this information is by inference and documented materials. If "no", a decision point entitled, "check on conditions," is met to see if this program has been turned down twice. If "no," then a decision variable will be set. Next, a process task entitled "wait for more favorable conditions" is seen. The time distribution is 100 to 150 days, with a most likely value of 115 days. This is to give the acquisition system more time to develop and mature the program further before making another decision. If the decision is "no" a second time, the program trips the "check on conditions" decision point and it is killed via the model artifacts "Record 3," "end simulation PreB," and "End Prior to start of Requirements swim lane preB" (not shown). This is all placed into an archive to be revisited later by the enterprise system.

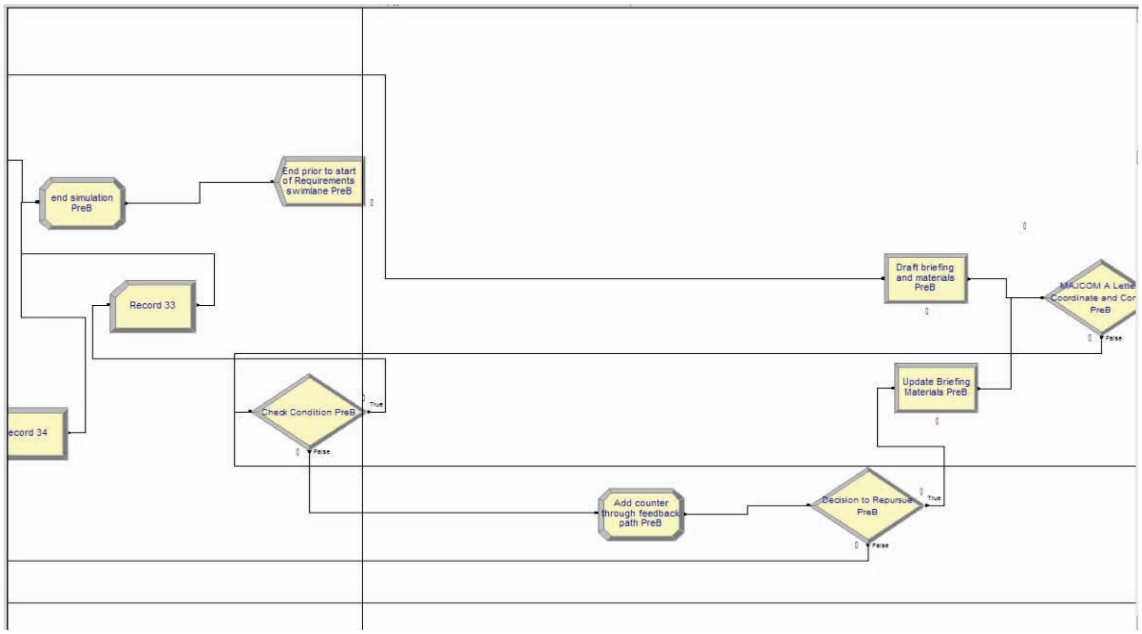

Figure 79: Pre-MS B Entry into formal requirements process at MAJCOM

A task entitled "draft briefing and materials" has a time distribution of 10 days to 40 days, with a most likely value of 31. The source of this information was derived from interview data and validated by JCIDS participant.

A decision point entitled "MAJCOM A Letters Coordinate and Concur PreB" has a probability of 90%. The source of this information is interview and later validation by JCIDS participant. Assuming this was a first time rejection by the MAJCOM “A” Letters, the program proceeds to a “Check Condition PreB” step which is a model artifact checking for a failure flag, it then meets the model artifact entitled “Add counter through feedback path,” which sets a variable indicating a failure. The probability of the next step, a decision point titled, “decision to pursue,” is approximately 85%. If successful, the next step is back toward the MAJCOM “A” letters, through the task “Update Briefing Materials PreB.” This task has a time distribution of 10 to 40 days, with a most likely value of 35 days. If not, the item is killed and archived, with the model artifacts “Record 33,” “End Simulation PreB,” and “End prior to start of Requirements swim lane PreB.”

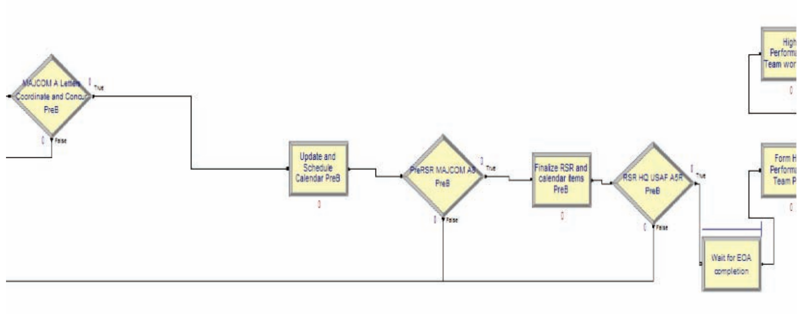

Figure 80: Pre-MS B Requirements swim lane MAJCOM process

A task entitled “Update and schedule calendar” has a time distribution of 3 to 15 days, with a most likely value of 12 days. The source of this information is inference derived from interview data and was validated by JCIDS participant.

A decision point entitled “Pre-RSR MAJCOM A8” has a probability of 99%. If “false,” then the program proceeds to the “check condition” step as discussed with Figure 79. The source of this information is interview and was validated by JCIDS participant.

A task entitled "Finalize RSR and calendar items PreB" has a time distribution of 21 to 35 days, with a most likely value of 28 days. The source of this information is from an interview and validated by JCIDS participant and the official Document Timeline Calculator.

A decision point entitled "RSR HQ USAF A5R PreB" has a probability of 98%. The source of this information is an interview. If the answer to this decision point is “no”, the process returns to the originator via the “check condition” step. The RSR must include the funding strategy for the remaining phases of Acquisition. Note that it does not include a guarantee of funds – rather it is a strategy or best guess or promise to fund. If the Joint Potential Designator needs to be updated, it is done at this point. However, the model assumes nothing changes. ACAT I activities have a 100% chance of getting joint interest. ACAT II activities are usually designated as “joint information” and any comments are taken under advisement, while ACAT III activities are designated “independent” AF only and are distributed to

the other services as a courtesy only for comment and review. The joint information was validated by A5 personnel and the official Document Timeline Calculator.

At this point, the process waits for the results of the Early Operational Assessment. The task "Wait for EOA completion," waits until a variable is set within the acquisition swim lane that the EOA was successful. This step was discovered during the validation phase discussing the model with individuals from both JCIDS and SAF/AQ.

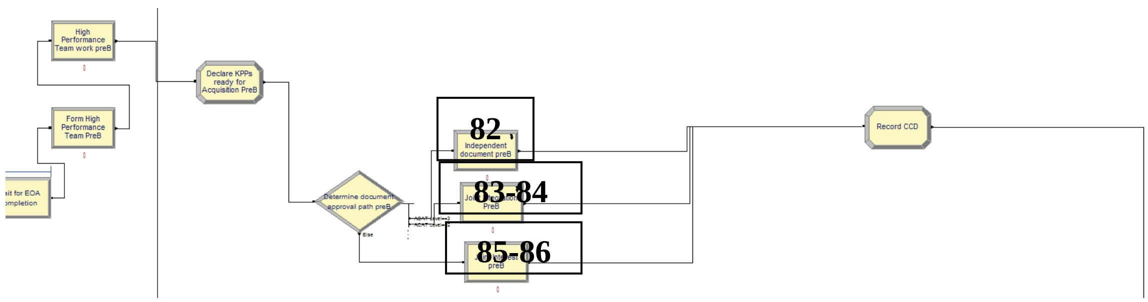

Figure 81: Pre-MS B Requirements swim lane JCIDS process

Returning to the process flow, the next task is called "form high performance team preB" has a time distribution of 30 to 45 days, with a most likely value of 41 days. The source of this information is an interview and validated by JCIDS participant and the official Document Timeline Calculator.

The task called "High-Performance Team (HPT) work" has a time distribution of 5 to 7 days, with a most likely value of 6 days. The source of this information is an interview and later validated by JCIDS participant. The product of this event is a "draft document".

At this point a variable is set, "Declaring the KPPs are ready for Acquisition preB," in order to trigger some key process work in the acquisition swim lane. This is an artifact of the model, but was discussed as an important issue during the validation activity in discussions with JCIDS participants and acquisition personnel.

At this point, a decision point entitled "Determine document approval path preB" separates the activity into three separate paths to approval depending upon the Joint Potential Designator, e.g. a "rough" surrogate for the ACAT level, of the activity. The model separates these based on the previously

designated ACAT level. ACAT I programs go to the “Joint Interest preB” step. ACAT II programs go to the “Joint Integration preB” step and ACAT III programs go to the “Independent Document preB” step.

Following the completion of these steps, which will be discussed in detail shortly, the CCD completion time is recorded as an artifact of the model with the step, “Record CCD.”

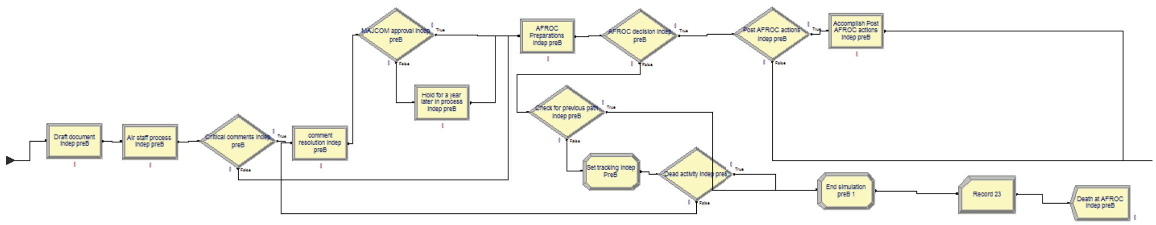

Figure 82: Pre-MS B Requirements Independent Document process

The task called "Draft document Indep preB" has a time distribution of 30 to 60 days, with a most likely value of 55 days and is really an “advanced” draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participants as well as by the official Document Timeline Calculator. In reality, at this point, information is passed to the acquisition system for preparatory work.

The task called "air staff processes indep preB” has a time distribution of 21 to 42 days, with a most likely value of 29 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review (with the possibility of an extension) form the basis of the time distribution. The information was later validated by a JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments Indep PreB" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "comment resolution indep preB" has a time distribution of 15 to 45 days, with a most likely value of 45 days. This is where the sponsor resolves O-6[63] level comments. The source of this information is interview and validation by JCID participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval indep preB" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This is represented by the step, "Hold for a year later in process Indep preB." It has a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The task called "AFROC preparations Indep preB" has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point "AFROC decision indep preB" has a probability of 90%. Of those 90%, 20% to 30% will have "actions" (Post AFROC "Go-do" actions) to accomplish, see step "Post AFROC actions Indep preB" and must return to the AFROC within 0 to 15 days, with a most likely value of 11 days. The source is the official Document Timeline Calculator.

If the initial answer at the AFROC is "no," there is a 99% chance the activity is "dead" and the document is archived. First, there is a check to see if the rejection is the first time or not. This is done at the step entitled, "Check for previous path indep PreB." The model sets a variable in "Set tracking Indep PreB." The next step is "Dead activity Indep PreB." This step has a probability of 99% being killed. If

[63] O-6: refers to a Colonel or Captain (for the Navy).

not, the program goes back to the step “comment resolution Indep PreB.” During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. Therefore, the path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. Otherwise, the activity is “dead” and this is represented by the model artifacts “End Simulation PreB 1,” “Record 23,” and “Death at AFROC Indep PreB.” The source of this information is an interview as well as review of official process documents. It has been validated by a JCIDS participant.

At this point the CCD is approved and the program resumes the process flow as depicted in Figure 81.

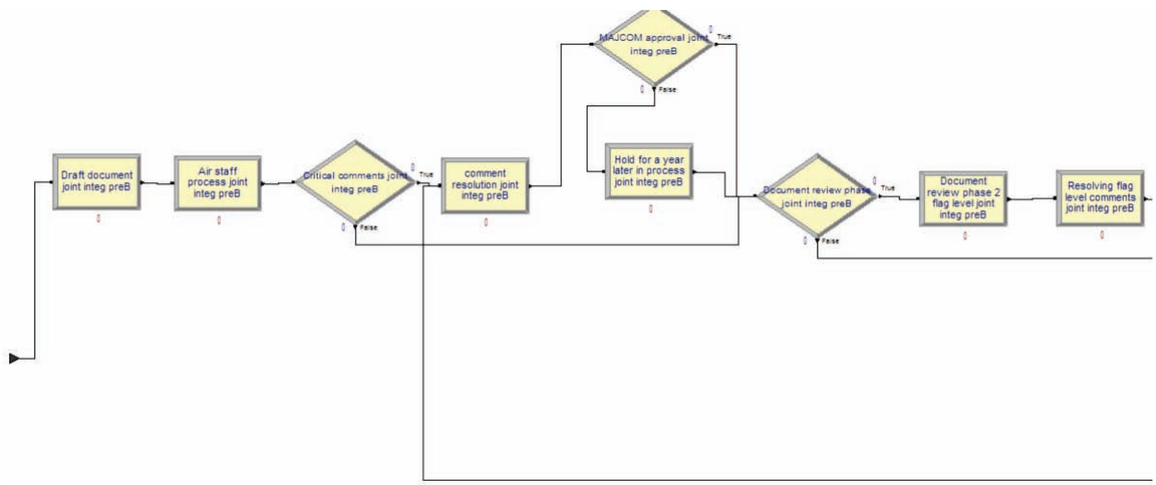

Figure 83: Pre-MS B Requirements swim lane Joint Integration process, Part I

The task called "draft document joint integ preB" has a time distribution of 30 to 60 days, with a most likely value of 55 days. This is really an “advanced” draft of the document previously worked on by the High Performance team. It is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document Timeline Calculator. In reality, information is passed to the acquisition system for preparatory work.

The task called "air staff processes joint integ preB” has a time distribution of 21 to 42 days with a most likely value of 29 days. The source of this information is interview and official documentation. A

few days of internal processing time and a maximum 21-day review (with the possibility of an extension) form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments joint integ preB" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the "Document review phase joint integ preB."

The task called "comment resolution joint integ preB" has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval joint integ preB" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is entitled "Hold for a year later in process joint integ preB" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The step "Document review phase joint integ preB" is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Interoperability Certification step. The next step, for those that require it, is called the "Document Review Phase 2 Flag level joint integ preB". This activity is taking place because there were "critical comments" that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 34 days. This has been validated by the Official Document Timeline Calculator.

The next step is another round of the sponsor “Resolving Flag Level Comments joint integ preB.” The time distribution is 15 to 30 days, with a most likely value of 28 days. This was validated by the official Document Timeline Calculator.

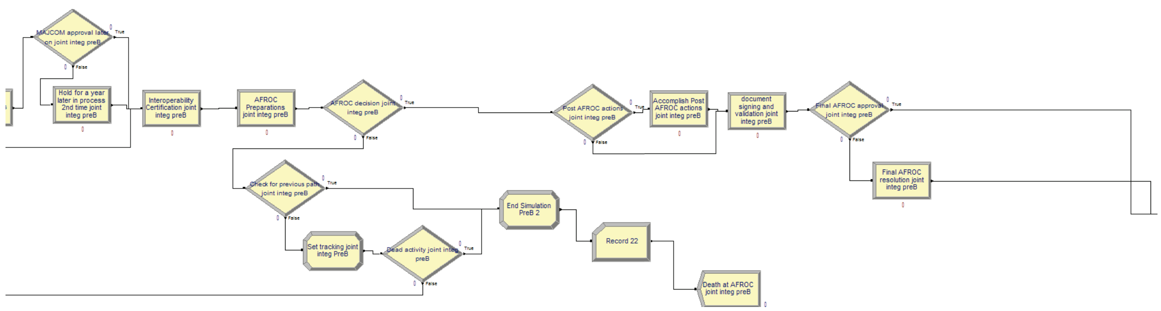

Figure 84: Pre-MS B Requirements swim lane Joint Integration process, Part II

The decision point entitled "MAJCOM approval joint integ preB” has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on “hold” for a year, probably the result of some “critical comments” that were not immediately resolved. This step is titled “Hold for a year later in process 2nd time joint integ preB.” This step has a time distribution of 270 to 300 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step. This step was validated by the official Document Timeline Calculator.

The step called “Interoperability Certification joint integ preB” has a time distribution of 10 to 20 days, with a most likely value of 15 days. The validation came from the official Document Timeline Calculator.

The task called “AFROC preparations joint integ preB” has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision joint integ preB” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish. This possibility is called

"Post AFROC actions joint integ preB." The step "Accomplish Post AFROC actions joint integ preB" includes returning to the AFROC within 0 to 15 days, with a most likely value of 11 days. If the initial answer at the AFROC decision is "no," there is a 99% chance the activity is "dead" and the document is archived. During validation of the model, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. For the logic of the model to remain intact, the program is first checked to see if it has previously been rejected. If not, a variable is set. Then it meets the step "Dead activity joint integ preB" with a 99% probability of being killed outright. If not, it is then set back to the comment resolution step. Otherwise, the program is killed via the model artifacts "End Simulation preB 1," "Record 22," and "Death at AFROC joint integ preB." The source of this information is an interview, the official Document Timeline Calculator as well as review of official process documents. It has been validated by JCIDS participant.

The step "Document signing and validation joint integ preB" is because the AFROC then requires 14 to 30 days, with a most likely value of 26 days, to get the document signed and validated across the AF structure. The step "Final AFROC approval joint integ preB" has a 99% chance to be approved by the AFROC without issues. The remaining 1% have issues requiring resolution, e.g. step "Final AFROC resolution joint integ preB," typically requiring 42 to 60 days to resolve, with a most likely value of 48 days.

At this point the CCD is approved and re-enters the process flow as depicted in Figure 81.

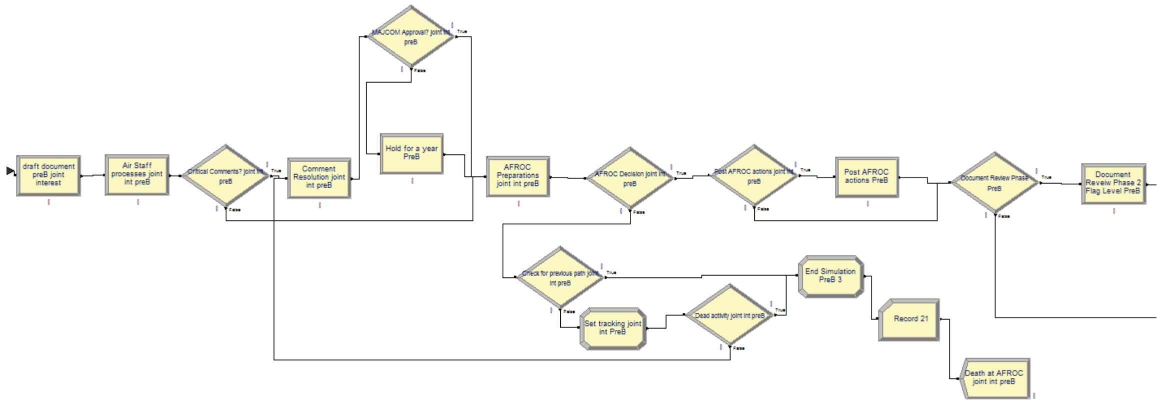

Figure 85: Pre-MS B Requirements swim lane Joint Interest process, Part I

The task called "draft document preB joint interest" has a time distribution of 30 to 60 days, with a most likely value of 55 days. It is really an “advanced” draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document Timeline Calculator. Information is also passed to the acquisition system for preparatory work, but is not done explicitly in this model.

The task called "air staff processes joint int preB” has a time distribution of 21 to 42 days, with a most likely value of 25 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review, with the possibility of an extension, form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "critical comments? Joint int preB" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "Comment resolution joint int preB” has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source

of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval? Joint int preB" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is “no,” the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on “hold” for a year, probably the result of some “critical comments” that were not immediately resolved. This is represented by the step “hold for a year PreB” with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The task called “AFROC preparations joint int preB” has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision joint int preB” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish. This is represented by “Post AFROC actions joint int preB.” Those programs with actions to accomplish, e.g. “Post AFROC actions” must return to the AFROC. It has a time distribution of 0 to 15 days, with a most likely value of 11 days. If the initial answer is “no,” there is a 99% chance the activity is “dead” and the document is archived. During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. This is represented by first checking to see if the program had been rejected at the AFROC before. If not, a flag was set, e.g. “Set tracking point int preB.” Then the decision point, “Dead Activity joint int preB” has a 99% probability that the program would be killed anyway. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. The

source of this information is an interview as well as review of official process documents. It has been validated by JCIDS participant.

The next step is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Functional Capabilities Board. This is called the "Document Review Phase 2 Flag level PreB." This activity is taking place because there were "critical comments" that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 38 days. This has been validated by the Official Document Timeline Calculator.

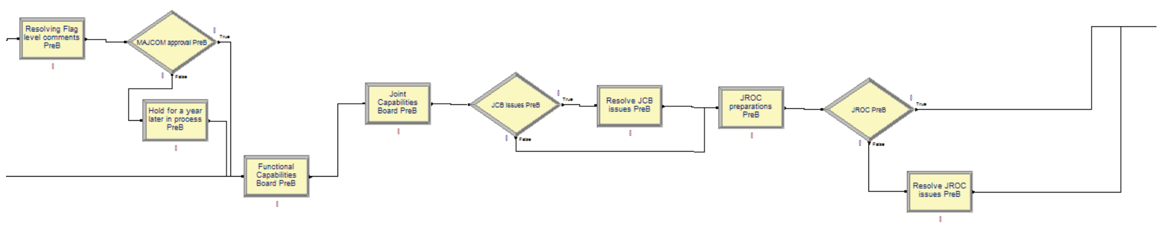

Figure 86: Pre-MS B Requirements swim lane Joint Interest process, part II

The next step is another round of the sponsor "Resolving Flag Level Comments PreB." The time distribution is 15 to 30 days, with a most likely value of 27 days. This was validated by the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval PreB" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is called "Hold for a year later in process" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

Next is the “Functional Capabilities Board PreB” for preparation and validation. This step has a time distribution of 7 to 21 days, with a most likely value of 14 days. This is considered a very difficult “scrub” of the activity. The model is programmed to assume all documents proceed without problem to the next step[64]. This step was validated by JCIDS participant, A5 participant, and the official Document Timeline Calculator.

The “Joint Capabilities Board PreB” requires another 7 to 21 days in preparation after the FCB, with a most likely value of 14 days. Following this is logic, titled “JCB issues PreB,” where 85% that meet the JCB board go on to the next step. The remaining 15% have issues to resolve, titled “Resolve JCB issues PreB,” typically taking 10 to 20 days, with a most likely value of 15 days, before reporting back to the JCB. However, the likelihood of another set of issues arising at the second meeting of the JCB is so remote that the model does not consider it at all.

The JROC requires 14 to 30 days, with a most likely value of 25 days, in preparations, e.g. mostly calendar scheduling issues, as noted in the step titled, “JROC Preparations PreB.” At the decision point “JROC PreB,” 98% are approved without issues. The remaining 2% have issues requiring resolution, typically requiring 42 to 60 days to resolve, with a most likely value of 51 days, as shown in the process step “Resolve JROC issues PreB.”

At this point the CCD is approved and the program resumes the process flow as depicted in Figure 81.

Following the approval of the CCD, it may become apparent that the CCD needs to be updated. The formal process allows for this possibility, however, the model does not for reasons of simplicity.

[64] Unfortunately, this is not the case. This error was discovered while preparing this dissertation for publication. The actual data is that 70% that meet the board go on to the next step. The other 30% have issues to resolve, typically taking 10 to 20 days, with the most likely value of 15 days before reporting back to the FCB. However, the likelihood of another set of issues arising is so remote that it is assumed to have a probability of zero. Given that the magnitude of this error is on the order of a handful of days versus the end result on the order of thousands of days, it is judged that the overall results in the dissertation are still valid.

Additional information is presented here to help the reader better understand this aspect of the process. CCD updates are:

> "…often a result of unforeseen program events (i.e., altering KPPs, budget cuts, significant schedule delays, technology maturity, leadership intervention, acquisition strategy changes, etc.). Sponsors may update the CCD before or after Milestone B. Document preparation, format, review, validation, approval, and archiving of subsequent updates are normally the same as the original CCD." (AFI10-601, pg 35)

Joint interest CCDs must go through the formal process to the JROC for approval. There is some latitude to eliminate some staffing steps to get to the JROC, but that is by special request. All other CCDs do not need to go through the joint process for approval.

Regardless of either having an updated CCD or the initial CCD done, the goal of the requirement's system is to have the CCD delivered to the MDA no later than 60 days prior to the scheduled MS B. This is another potential quality check to test in the model and is reserved for future work.

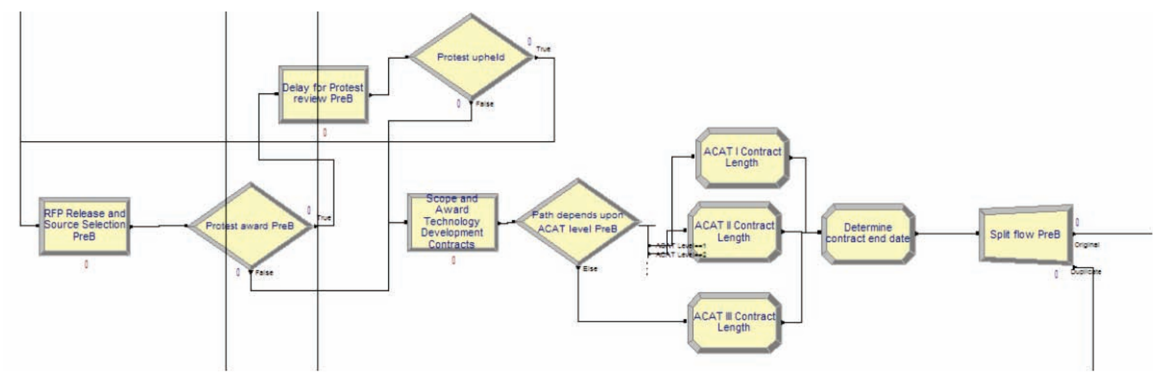

Figure 87: Pre-MS B early acquisition swim lane activities

The first step in this phase is entitled "RFP release and Source Selection PreB". It has a time distribution of 90 to 180 days, with a most likely value of 160 days. The main assumption is that there will be no sole source awards and that sole source options are not part of the acquisition strategy completed in the last phase. Funding must be in place along with the MS A declaration. The source for this information is experience, interviews and documentation. It was validated via acquisition personnel from SAF/AQ.

A decision point entitled "Protest award PreB" has a probability of 20%. The source of this information is open source materials, media, and other documents. If "yes" a delay is encountered while appropriate agencies review the process. The delay, titled "Delay for Protest review PreB" can be between 30 and 60 days, with a most likely value of 50 days. Afterwards, a decision point entitled "Protest Upheld" is reached. Based on feedback from SAF/AQ personnel during the validation of the model, the probability of this step is 40%. If "yes" the source selection process is repeated. If "no", the process task of "Scope and Award Technology Development contracts" is next.

A task entitled "Scope and Award Technology Development contracts" has a time distribution of 30 to 120 days, with a most likely value of 100 days. This duration is dependant upon the complexity of the required task as well as if the study can be exercised as a task or option on an existing contract vehicle or if a sole source or other contracting mechanism is required. However, speed is favored. The time duration associated with the length of the contract for technology development has a distribution based upon the ACAT level of the program. ACAT I programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 1980 days. ACAT II programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 1365 days. ACAT III programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 480 days. The source of this information is by inference and experience. Additional credence can be found in official process documentation. Validation of these assumptions was received from personnel in SAF/AQ.

The process flow from the previous step goes into two different places. First, it goes into the Contractor Swim Lane – reflecting the work a contractor is doing - to be described later. Second, parallel processes are initiated to prepare for moving the program into the next phase of development.

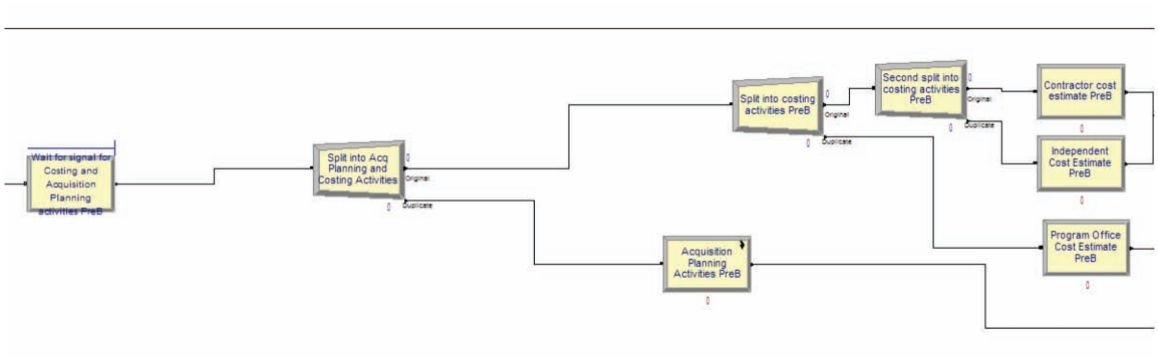

Figure 88: Pre-MS B Acquisition costing and acquisition planning

From the split flow in Figure 87, the first activity is a queue entitled, "Wait for signal for Costing and Acquisition Planning activities preB." This signal will come from the contractor swim lane indicating a certain percentage of the contract is elapsed, which will be discussed hereafter. It is a time delay as these activities will not start until near the end of a contract and in preparation of a Milestone B declaration.

The next step is an artifact of the model, requiring parallel processing. This allows both the cost exercises as well as the acquisition planning activities to proceed simultaneously. The branch going to the cost area will be split again to allow three separate costing activities to proceed in parallel.

The process task entitled "Acquisition Planning Activities PreB" has a time distribution of 120 to 250 days, with a most likely value of 240 days for ACAT I programs. For ACAT II or ACAT III programs, the time distribution is 120 to 250 days, with a most likely value of 185 days. The source of this information is interviews and published timelines and official documentation. It was validated by acquisition personnel.

The three separate costing tasks, "Program Office Cost Estimate PreB" has a time distribution of 60 to 90 days, with a most likely value of 65 days. The "Contractor Cost Estimate PreB" has a distribution of 45 to 90 days, with a most likely value of 50 days. The process task, "Independent Cost Estimate PreB" has a distribution of 30 to 60 days, with a most likely value of35 days. The source of this information is acquisition personnel and validation was obtained from other acquisition personnel.

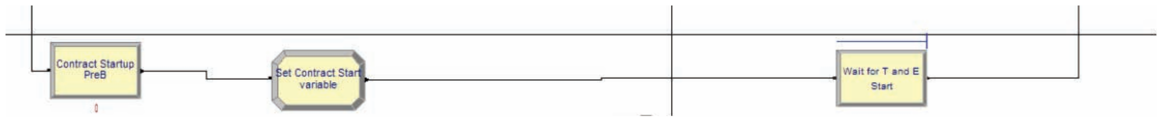

Figure 89: Pre-MS B Contract start-up activities

The initial process step in this swim lane is called "Contract Start-up PreB." It has a time distribution of 30 to 45 days, with a most likely value of 42 days. This is regardless of the size and complexity of the overall task. This consists of the preliminary efforts to staff the activity and organize appropriately. The source of this information is experience and source documentation. It was validated by acquisition personnel.

As an artifact of the model, a variable is set to record the "start" of the contract. Next, a queue is met entitled, "Wait for T&E start." This queue waits for a signal from the contractor swim lane. The signal is triggered after a certain period of contract time has elapsed. Additionally, the KPP development must be completed as discussed in the requirements swim lane before the program can be released from the queue. The specifics on the T&E signal will be discussed later. This information was discovered during the validation phase of the model when working with acquisition personnel.

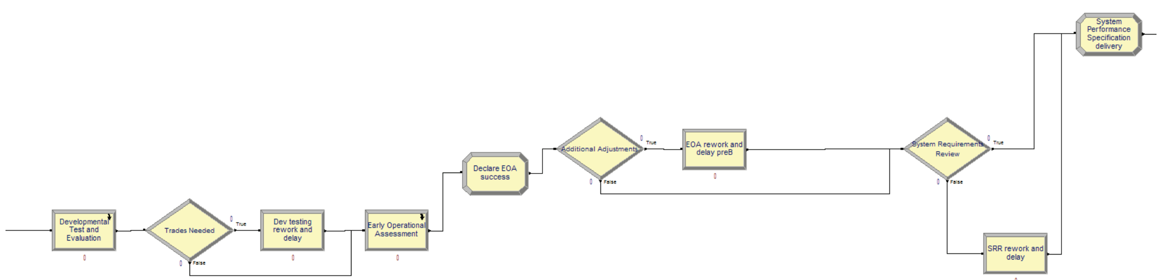

Figure 90: Pre-MS B Acquisition swim lane Systems Engineering activities

Systems Engineering activities are key elements in systems development. It includes many testing activities and reviews. The model acknowledges these activities as it assists with the management of the contractor activity.

Upon completion of any design work, which is not explicitly model, but assumes to be happening as part of the time elapsed on the contract, vital test and evaluation activities take place. As

mentioned earlier, the testing done during this phase cannot begin prior to the completion of the KPP development activity of the Requirements Swim Lane AND receiving a trigger from the Contractor swim lane of reaching a percentage of scheduled contract time elapsed.

The task "Developmental Test and Evaluation" is modeled as having a time distribution based upon ACAT levels. ACAT I programs require 25% of scheduled contract length before starting DT&E. The actual time distribution is based upon a triangular distribution around the 25% of the scheduled contract length, where the range is 75% to 110% of the recommended DT&E start time, with the most likely being the 25% of the scheduled contract length. ACAT II and ACAT III programs require 15% of the scheduled contract length, with a similar triangular distribution. This was validated in speaking with acquisition personnel.

After developmental testing, a decision point "trades needed" is met. This has a probability of 70%. If "yes" a process task called "Dev testing rework and delay" is met. This task has a distribution of 30 to 180 days, with a most likely value of 90 days. Future work should also include automatic 1% cost penalty to the contract costs. Otherwise, the process proceeds to the next step.

The Early Operational Assessment is a second testing opportunity. The EOA must be completed prior to the formation of the HPT in the Requirements Swim Lane. The task EOA duration is 10% of the scheduled contract length. The actual duration of the task is based upon a triangular distribution around the 10% of time. The range is from 75% of the testing time through 110% of the testing time. This was validated by acquisition personnel. Upon successful completion of the EOA, a variable is set to announce its completion, so that the HPT work may begin.

A decision point called "Additional adjustments" comes next. This has a probability of 50%. Meaning that there is a 50% there will need to be some additional work done to correct things found in the EOA. If "yes" a process task called "EOA Rework and Delay" is met. This task has a distribution of 30

to 180 days, with a most likely value of 90 days. For future work, this would cause the program to incur an automatic 2% cost penalty to the contract costs. Otherwise, the process proceeds to the next step.

The "System Requirements Review" follows at the completion of the testing activities. This decision point has a probability of 65%. If "yes", the step "SRR rework and delay" has a time distribution of 60 to 180 days, with a most likely value of 160 days.

The end result is the approved "System Performance Specification". This "result" will consist of plans, specifications, studies, and rudimentary component-level prototypes that will be used in the next phase of system development. It is also a pre-requisite for completing the current milestone activities and several acquisition planning activities rely upon this output in order to proceed further with the overall process. A variable is set marking the time elapsed to this point.

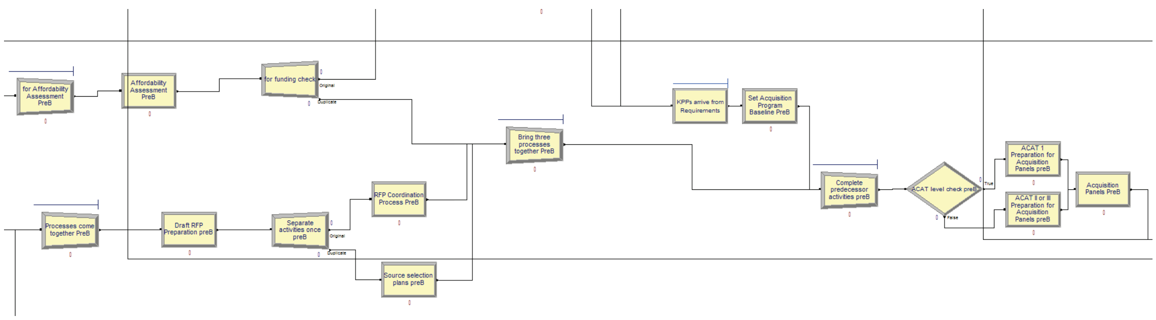

Figure 91: Pre-MS B Acquisition swim lane preparations for Acquisition Panels

Only upon completion of the three cost estimates, as noted by the queue titled "for Affordability Assessment PreB", is the "Affordability Assessment PreB" done. The time duration for this assessment is approximately 120 to 180 days, with a most likely value of 160 days. The source of this information is official documents and by inference. This was validated by acquisition personnel.

An artificial artifact of the model is inserted here to check for funding, and a penalty assessed if it is not available. This will be discussed later.

With the completed of the acquisition planning activities and the system verification review completed, both shown previously, the process task, "Draft RFP Preparation PreB" may begin. It takes

10 to 20 days, with a most likely value of 17 days. Typically there is some effort to waive the firm prerequisites and preliminary results will be used, especially if trying to meet a “target” MS B date goal, but the model does not attempt to account for this variation. The source of this information is experience and source documents, and was subsequently validated by acquisition personnel. Outputs from this step go to two different tasks – one related to the RFP coordination process, and another to the development of the Source Selection plans.

A process task called “RFP coordination process PreB” has a time distribution of 25 to 50 days, with a most likely value of 45 days. Some of this coordination is done within the branch of service doing the acquisition and some of it is done with industry. The source of this information is interviews, experience and source documents. It was later validated by acquisition personnel.

Another process task, “source selection plans preB” has a time distribution of 30 to 65 days, with a most likely value of 60 days. This time duration is influenced by the current state of the contractor’s work which impacts the final requirements that will be part of the future contracting effort. The source of this information is experience and published timelines. Validation was provided by acquisition personnel.

An artifact of the model requires that the three different parallel processes be brought back together prior to proceeding further.

Upon return from the funding check, and also as the CCD is being finalized in the requirements swim lane, the approved KPPs will be released to the Acquisition swim lane. At this point the Acquisition program baseline will be set. This marks the “official” baseline for the remaining program and will be the benchmark against which all further development will be measured. It is not unusual for these attributes to be set based on draft or preliminary documents. The task has a time distribution of 10 to 30 days, with a most likely value of 25 days. The source of this information is official documents and inference. It was later validated by acquisition personnel.

An artifact of the model brings the parallel paths together with the activity called "Complete predecessor activities preB." Then the model sends the program down the proper path depending upon the ACAT level of the program. The process task for the preparation for the Acquisition Panels has a time distribution of 40 to 60 days, with a most likely value of 56 days for ACAT I programs. For the ACAT II and ACAT III programs, the preparation requires 15 to 30 days, with a most likely value of 25 days. The majority of this time is to get in synchronization with the set calendar of these panels. Most of the "work" has already been done prior to this time in previous tasks. The source of this information is an interview and source documents. It was later validated by acquisition personnel.

The process task entitled "Acquisition Panels PreB" has a time distribution of 15 to 35 days, with a most likely value of 30 days. The time distribution allows for delays and resolution of last minute issues in these events.

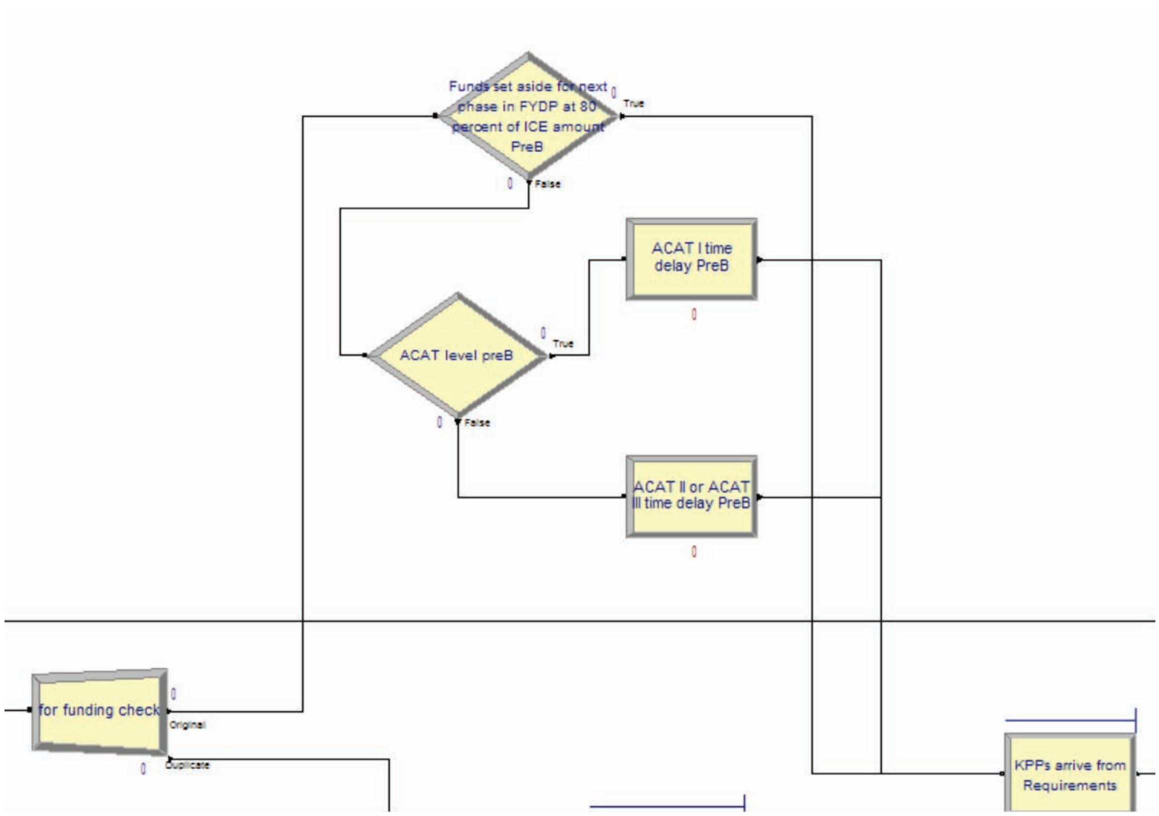

Figure 92: Pre-MS B PPBE Funding check

Despite the discrete nature of the model the PPBE is constantly seeking updates to the cost and schedule updates for the system. Nevertheless, for simplicity, the first formal input of these costs occurs upon completion of the "Affordability Assessment" in the Acquisition swim lane. The response of the model to this input is a decision point entitled "Funds set aside for next phase in FYDP at 80% of ICE amount PreB". This decision point has a probability of 70%. This means that the Air Force is making an investment decision into the development of this concept. The irony is that the decision to fund at this level is made within the corporate structure of the Air Force, e.g. within the Budgeting and Programming system, and the acquisition System with its accompanying Milestone decision is merely a ratification of the previously taken action by the Air Force.

If the decision is "no", a time delay is incurred. The time delay task has a time distribution of 30 to 180 days, with a most likely value of 120 days for ACAT I programs. For ACAT II and ACAT III programs, the time distribution is 90 to 270 days, with a most likely value of 225 days. The reason for these distributions is that significant resources have been expended by the Air Force to date and there is tremendous institutional pressure to continue the development of the concept. This does have a direct impact on reaching Milestone B – the program must be fully funded, e.g. at 80% of the ICE amount, in order to proceed further. In reality, this means that if the money still isn't there, having the plan in place prevents further delays, but it still doesn't guarantee the program will be fully funded. Furthermore, it is also likely the program is funded to the Program Office Cost estimate, which is historically lower than ICE estimates.

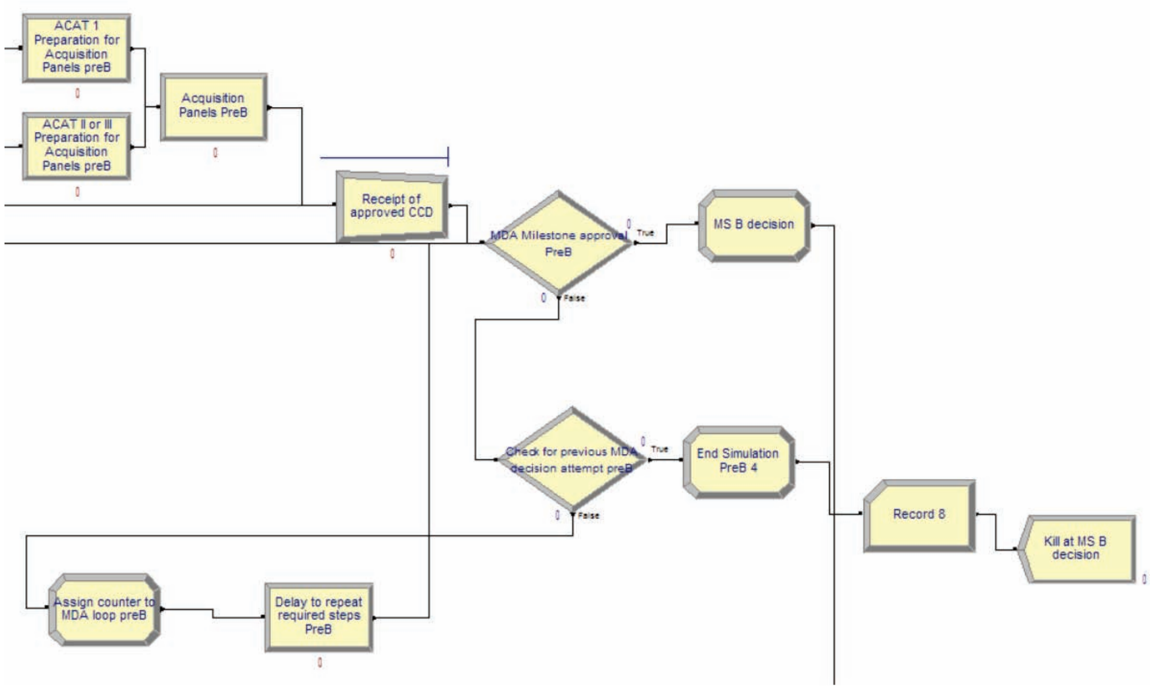

Figure 93: Pre-MS B Acquisition swim lane Milestone B decision

Upon formal receipt of the approved CCD from the requirements swim lane, the milestone decision can be made. A decision point entitled “MDA Milestone Approval PreB” has a probability of 99%. This probability relies upon the confluence of all previous tasks preparing for the next phase of acquisition development and the approved CDD from the requirements swim lane. The source of this information is official documents and subsequent validation from acquisition personnel.

If “no”, a check is made to see if the program has failed previously. If so, the program is killed. If not, a counter is attached to the program to indicate the milestone failure. Officially, the process returns to the “Preparation for Acquisition Panels” step to repeat the entire process from there. However, the MDA can reject the program for various reasons and the personnel working the program would go back to the portions that needed to be redone and fix them. Therefore, an artificial step entitled “Delay to repeat required steps PreB,” was created. It has a time distribution of 60 to 180 days, with a most likely value of 120 days. After completion of this step, the program then returns to the MDA decision point. If the program is rejected twice, the process ends, as evidenced with the model

artifacts of “End Simulation PreB 4,” “Record 8,” and “Kill at MS B decision.” In essence, this means the sponsoring MAJCOM will withdraw its support and/or funding and/or restructure the program by going back to the beginning of the overall process. If the MDA approves the program, Milestone “B” is declared. The “program” contains all of the information, approval, and consent needed to proceed into the next phase of activity.

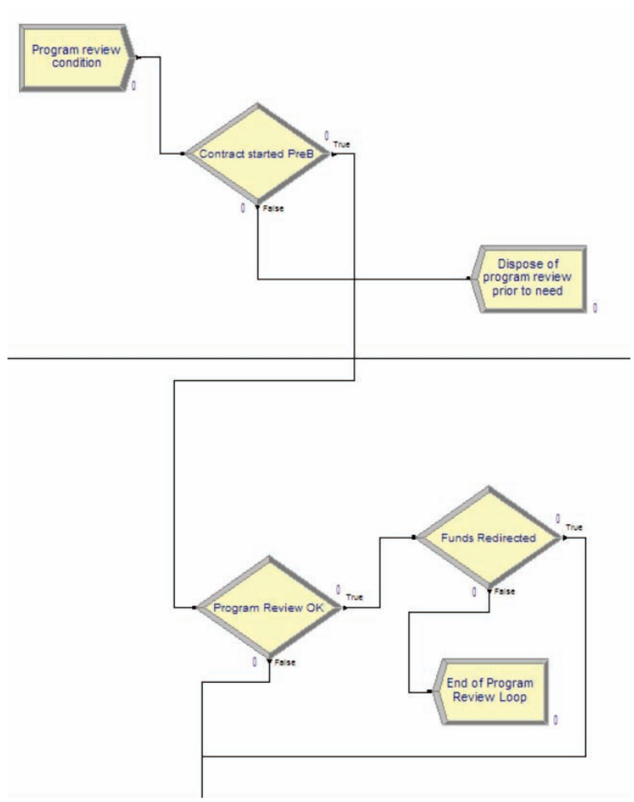

Figure 94: Pre-MS B Acquisition swim lane financial uncertainty engine

Contract management is not explicitly modeled. However, several other activities are modeled that can be used a surrogates for this activity. The first step in this surrogate activity mentioned is the generation of a “Program Review Condition.” Depending upon the ACAT level, this activity would generate a potential program review. If the program in question was ACAT I, the condition would be invoked using a triangular distribution between 90 and 120 days, with a most likely value of 105 days. For ACAT II programs, this triangular distribution is between 160 and 200 days, with a most likely value of 180 days. For ACAT III programs, the triangular distribution is between 160 and 200 days, with the

most likely value of 200 days. Originally, these distributions were longer, on the order of about every six months to mimic the behavior of the Spring and Fall program reviews. Many of those who helped validate the model took exception to this approach and indicated that whether under a formal review or not, the frequency of these serious funding questions was tied to the ACAT level. The Higher the ACAT level, the more frequent reviews are or with a lower ACAT level, the less frequent the reviews are. Therefore, the ACAT III programs approach a nearly six month review cycle while the ACAT I programs are more frequent.

A check is made to see if the contract has started yet. If not, the condition is "thrown away" via the model artifact "Dispose of program review prior to need." Otherwise, the program condition meets a decision point called "Program review OK." It has a probability of 95%. A future work modification would make this probability variable, as the number of "unanticipated events" increases, as discussed later, the probability should slowly decrease.

If the result of the program review is "yes", another decision point is reached called "Funds Redirected." This decision point has a probability of 20%. The source of this information is interviews and inference, and later validation. This speaks to the fact that even though a program may be doing well, outside influences may have already decided to make financial changes anyway.

If the outcome of the program review is negative or the outcome of the "funds redirected" point is "yes", then the process is directed to a task called "Prepare Courses of Action," which will be discussed later. A negative outcome from the "funds redirected" step will end the condition with the model artifact "End of Program Review Loop."

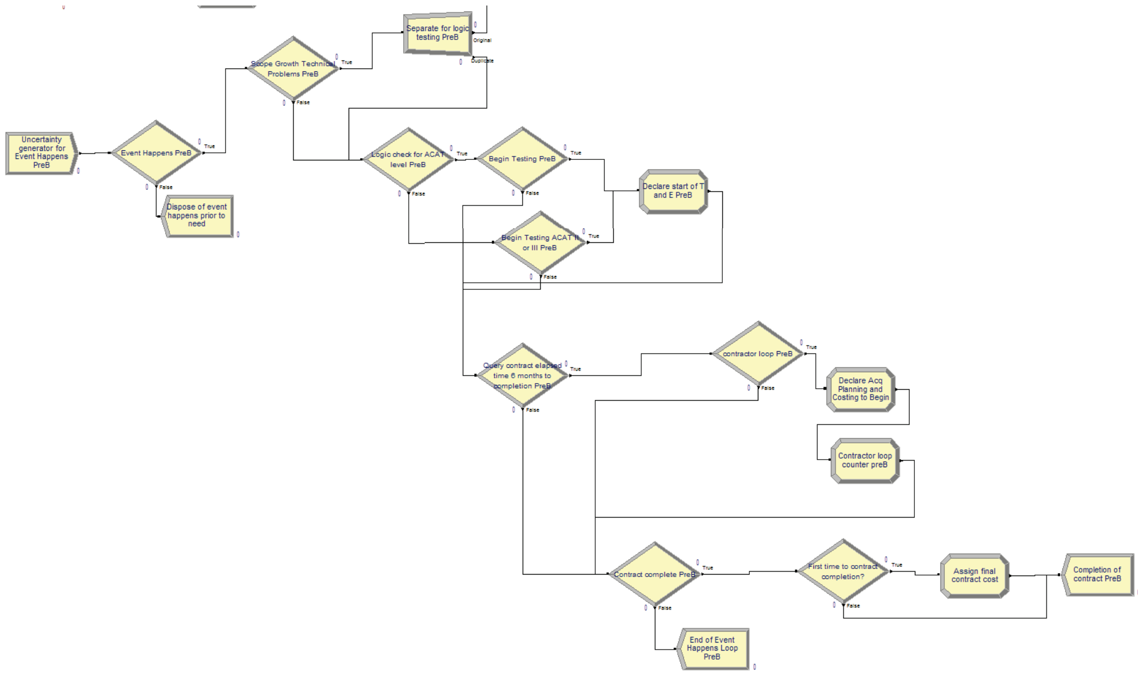

Figure 95: Pre-MS B Contractor swim lane uncertainty generator and contract engine

The contractor portion of the model is significantly less complex than the other portions of the model. However, this part of the model captures an important interaction that can serve as one surrogate for uncertainty. This surrogate is easily recognizable and often mentioned in the literature as “stuff happens”. The abstractions in this swim lane will still keep this surrogate viable, but won’t cause it to be too complex for understanding. The first task is to generate an uncertainty event. This occurs on a frequency modeled by a triangular distribution with a range between 30 and 90 days, with a most likely value of 60 days. During the validation of the model, acquisition professionals pointed out that the kinds of things that required their attention outside of their normal job descriptions relating to the program in development happened about every two months.

The check point “Event Happens preB” waits for the contract to start. If the contract has not started, the uncertainty event is thrown away, as evidenced by the model artifact “Dispose of event happens prior to need.” If it has started, the event proceeds to the next step, e.g. an “event” has happened. These are the larger issues that arise during the day-to-day performance of the contract.

This task serves largely as the surrogate for uncertainty. The source of this information is experience and the assumptions required for this model to work.

A decision point called "Scope Growth/Technical Problems?" has a probability of 20%. The smaller probability is a trade-off between the short time duration of the previous step and the probability that troubles really do occur over the course of a contract. If "yes", the flow is split, so that one "event" moves to a process step in the Acquisition Swim Lane, "Prepare Courses of Action," which will be discussed later. Additionally, the process flows in the direction of another decision point, called "Contract Complete?" The source of this information is experience and is required to make the model work.

First, a check is made to see if the program is ACAT I or not. If the program is ACAT I, the decision point, "Begin Testing PreB" is met. If 75% of the original contract time has elapsed since the contract start, a signal will be set "Declaring start of T&E preB". Otherwise, the event proceeds to the next step. If the program is ACAT II or ACAT III, the decision point "Begin Testing ACAT II or III PreB" is met. If 85% of the original contract time has elapsed since the contract start, a signal will be set "Declaring start of T&E preB." Otherwise, the event proceeds to the next step.

The next decision point is to query if the contract length is within 6 months of contract completion. If "yes", the next step is to query if it is the first time. If "yes", then this triggers the Acquisition Planning Activity step and the three costing activities. It also sets a flag indicating it has tripped the contractor loop so subsequent events won't go down this path again and then proceeds to the next step. If the event is met with "no" to either question, the flow proceeds to the next step as well.

The decision point "Contract Complete preB" is a simple logic test to see if the total time elapsed is greater than total of the contract starting time and the contract length. If "no", the event is removed from the model using the artifact, "End of Event Happens Loop PreB." If "yes", a query is made

to see if this is the first time the event has arrived at this point. If the query is affirmative, the final variable for the future work extension on the final contract cost, which will be explained later, is set. Then the event is disposed at the "Completion of contract PreB." If the query is false, is it immediately sent also to the artifact "Completion of contract PreB" for disposal.

This particular approach was used to accommodate multiple "events" working their way through the system at any given time and be able to trigger events appropriately.

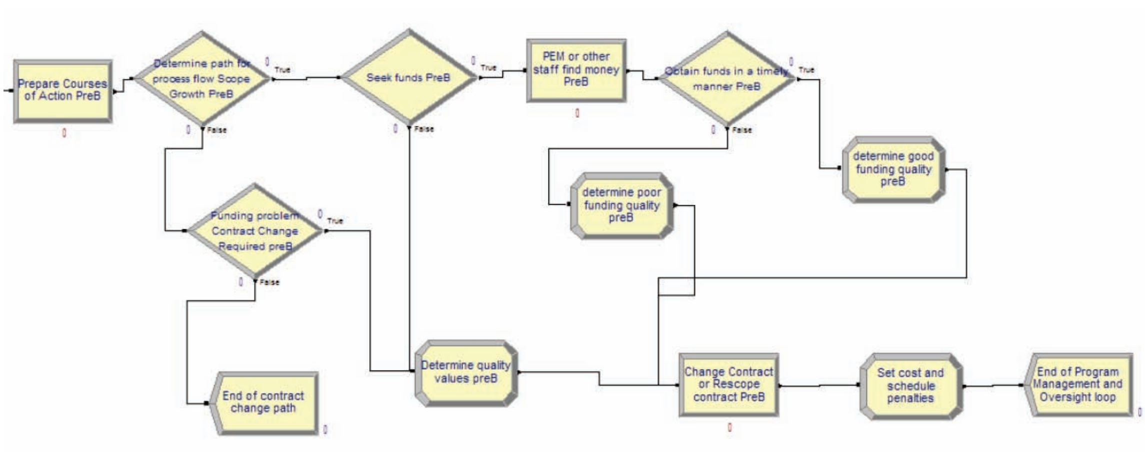

Figure 96: Pre-MS B Acquisition swim lane program management and oversight loop

This particular set of activities drew the most scrutiny during the validation portion of the model development, especially from the acquisition personnel. Many changes were made to the model based upon their feedback.

Whether an "event" or a "program review condition" appears at the step, "Prepare Courses of Action PreB," it is treated the same. The task, "Prepare Courses of Action PreB" has a time distribution of 5 to 10 days, with a most likely value of 8 days. This gets into the daily activities of the office managing the program and dealing with issues. The source of this information is personal experience, interviews and inference. Acquisition personnel validated the information at this step.

At this point, 80% of the process flow will proceed down the "Scope Growth/Technical problems" path. The other 20% will follow the "Funding Problem" path. The source of this information

is from interviews, inference and personal experience. Regardless of the reason, since scope growth and technical issues can also be boiled down to financial impacts, the rest of the diagram deals with financial issues.

A decision point, “Funding problem Contract Change Required PreB” has a probability of 40%. A future work extension to the model to make it more realistic would be to allow this probability to slowly increase depending upon the total number of “events” that have happened. If “false”, the event or program review condition is disposed at the model artifact “End of contract change path.” If “true,” several quality values are set. These quality values will determine the percentage of cost and schedule growth added in a later step.

The decision point named “Seek Funds PreB” has a probability of 30%. This probability is influenced by whether or not the program can deal with the event or problem on its own. The reason for the “problem” may be outside of the acquisition swim lane. If “yes”, a task entitled “PEM or other staff find money PreB” begins. It has a time duration of 14 days to 180 days for ACAT I programs, with a most likely value of 83 days. For ACAT II and ACAT III programs, there is a longer timeline associated with finding funds, having the same distribution, but the most likely value is 160 days. This time duration is influenced by the fact that there are many, many sources of money. These sources can be other programs, results of different “periodic reviews” and other items. Sometimes, the movement of money must rely upon approval from higher levels, up to and including Congress. Additionally, the timing of when the request goes in, e.g. the month of the year compared to the POM cycle and the overall amount required, affects the ability of the PEM to find the money required, e.g. the more money requested, the longer amount of time is necessary to obtain it. This step was validated by PPBE and acquisition personnel.

As an aside, in the case of budget execution problems, another task is invoked but it is not represented in the model. It is called “Prepare Program budget decision information.” This task feeds

directly into the budgeting and programming process. It is used in subsequent iterations of the PPBE process. The source of this information is official documentation and inference.

A decision point entitled, “Obtain funds in a timely manner PreB” has a probability of 65%. This probability is influenced by the fact that there are many, many sources of money. These sources can be other programs, results of different “periodic reviews” and other items. Sometimes having the money arrive “late” is just as bad as or worse than not getting the money at all due to the various funding constraints associated with the funds. The source of this information is inference and experience. If true, e.g. moneys are obtained in a timely manner, the impact will be a 4.5% growth in the cost and schedule of the program. If false, e.g. moneys are not obtained in a timely manner, the impact will be a 5.5% growth in the cost and schedule of the program. These penalties will be assessed in a later step.

A process task, “Change contract/re-scope effort” has a time distribution of 15 to 60 days, with a most likely value of 20 days, where the variation is dependent upon the scale of contract change and the complexity of the change. This is associated with the actual time required to process a contract change. The source of this information is experience and inference.

Appendix A provides some insights into the various causes of cost and schedule growth, enumerated through an extensive literature search. In some sense, the randomness of the outcomes is dependent upon where in the system the activity occurs. For purposes of simplicity, an assumption that with every contract change, a 5% schedule and cost penalty should be assessed, is made. This approximation was validated as reasonable by acquisition personnel.

The step “Set cost and schedule penalties” is where an adjustment to the program is made; reflected in terms of cost and schedule[65]. The degree to which both cost and schedule will be changed is dependent upon the quality variables set. Cost and schedule will either experience a 4.5%, a 5%, or a

[65] Since it has already been noted that schedule is a reasonable surrogate for cost or rather, is closely tied to cost, the model only closely tracks schedule. The “hooks” are there for future work to add cost as an explicit part of the model.

5.5% growth to their current baseline status. As multiple issues can be working their way through the system at any given time, there is a potential for large cost and schedule growth to occur.

Following this activity, the "event" or "program review condition" is permanently removed from the model through the model artifact of "End of Program Management and Oversight loop."

The Pre-Milestone C Swim Lanes

This phase represents all of the Pre-MS C activities in all four swim lanes: Requirements; PPBE; acquisition; and contractors. The notations on the figure below indicate which figure to refer to in order to get detailed model information on specific sections of the model. The detailed explanation for the content within the figure will immediately follow the figure.

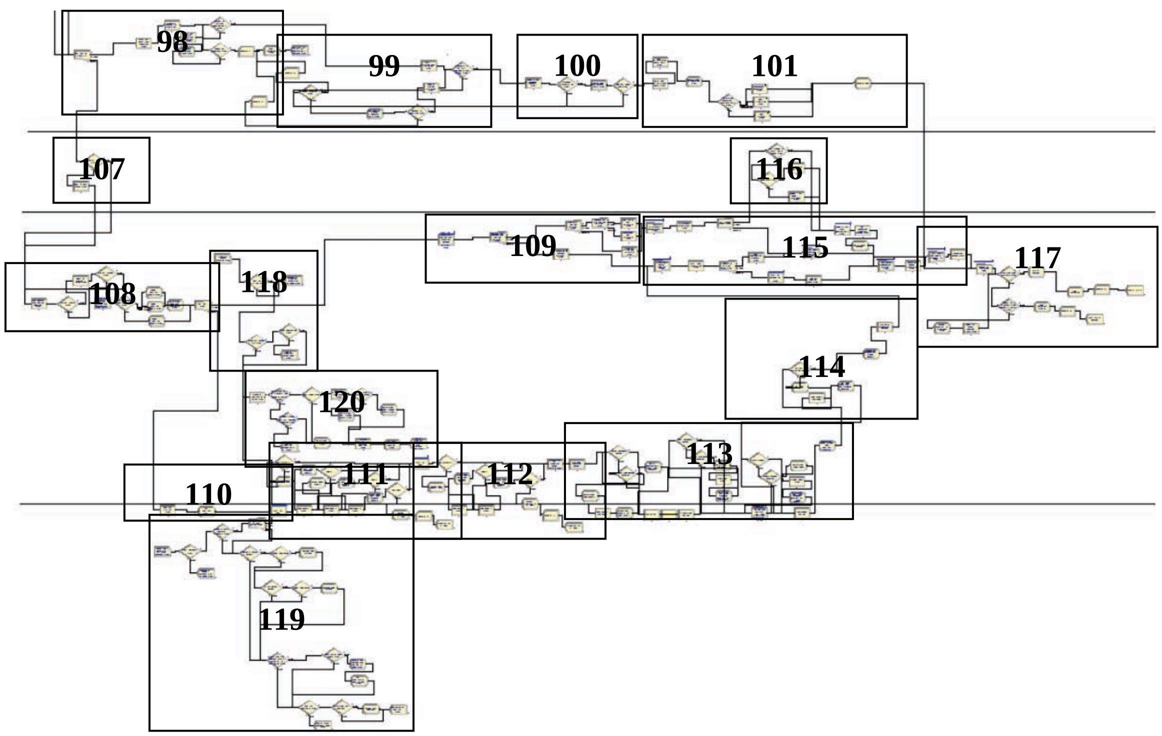

Figure 97: Pre-MS C Swim Lanes with Reference Figures

This phase begins in the requirements swim lane, in the upper left corner of this figure.

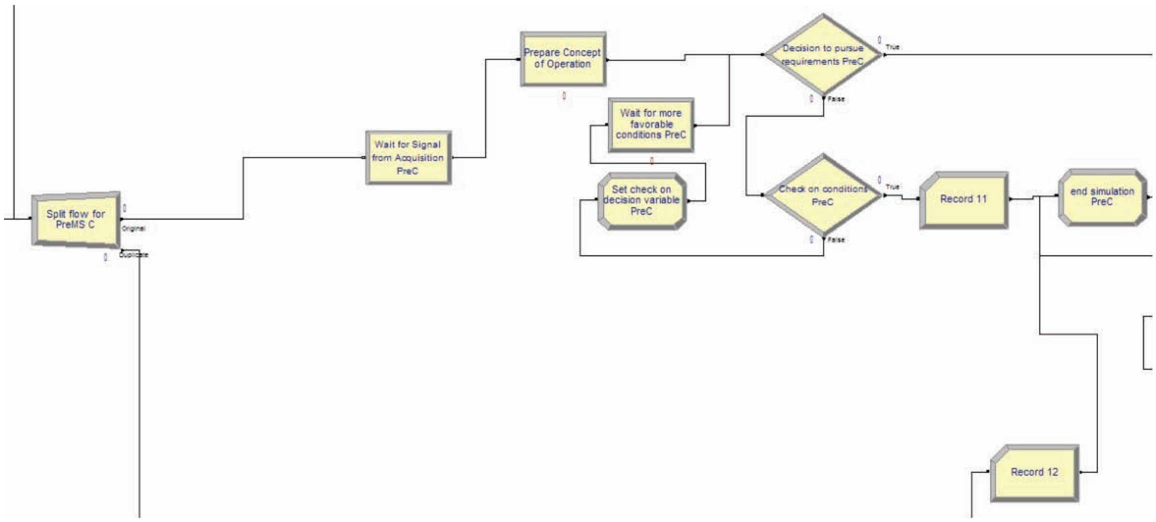

Figure 98: Pre-MS C Early Requirements Swim Lane

The first step coming after MS B is an artifact of the model, a separation of programs that will allow parallel processing in the requirements swim lane and the acquisition swim lane. The next step is "Wait for Signal from Acquisition PreC." This step is important as it serves as a time delay, waiting for the acquisition system to award a contract. After the contract is awarded, the other activities of the swim lane may begin. For practical purposes, this merely acknowledges the need for the requirements system to ascertain the direction of the program in development.

The first process task of this swim lane is entitled "Prepare Concept of Operation" with a time distribution ranging from the amount of time equal to 60% of the System Design and Development original contract length to 80% of the System Design and Development original contract length, with the most likely amount being 70% of the System Design and Development original contract length. The task starts at roughly the same time the contract is awarded. The inputs to this task are the outputs from the previous phase. The source for this information is from interviews and was validated by JCIDS participant.

At the Milestone B decision, the MDA may also direct another AOA to be conducted to update or correct the previous AOA results, taking into account any factors that may have changed during the preceding phase. The probability of this occurring is unknown at this time, however, for purposes of this

model, the time to complete the AOA is less than the “Prepare Concept of Operation” task and is therefore inconsequential to the overall task. Any results of the AOA will be folded into this activity.

During the duration of this task, information about future capabilities is sent to Acquisition and the Budgeting swim lanes to eventually get added to this program. There is a lot of interaction during this time with Acquisition, especially in attempting to understand how, when, and where this program’s capabilities can be used. The process will attempt to wait as long as possible for more detailed results from prototypes, engineering models and other acquisition results. The source for this information is from experience and interviews.

A decision point entitled "decision to pursue requirements" has a probability of 98%. The ultimate purpose of starting this process is to result in an approved Capability Production Document, CPD. The reason for the high probability is that the MDA has an agreement with the MAJCOM-sponsoring commander to pursue Milestone C and Acquisition activity is already taking place. The organizational momentum is difficult to stop. The source of this information is by inference and documented materials. If “no”, a decision point entitled, “check on conditions Pre C,” is met to see if this program has been turned down twice. If “no,” then a decision variable will be set. Next, a process task entitled “wait for more favorable conditions PreC” is seen. The time distribution is 100 to 150 days, with a most likely value of 115 days. This is to give the acquisition system more time to develop and mature the program further before making another decision. If the decision is “no” a second time, the program trips the “check on conditions PreC” decision point and it is killed via the model artifacts “Record 11,” “end simulation PreC,” and “End Prior to start of Requirements swim lane preC” (not shown). This is all placed into an archive to be revisited later by the enterprise system.

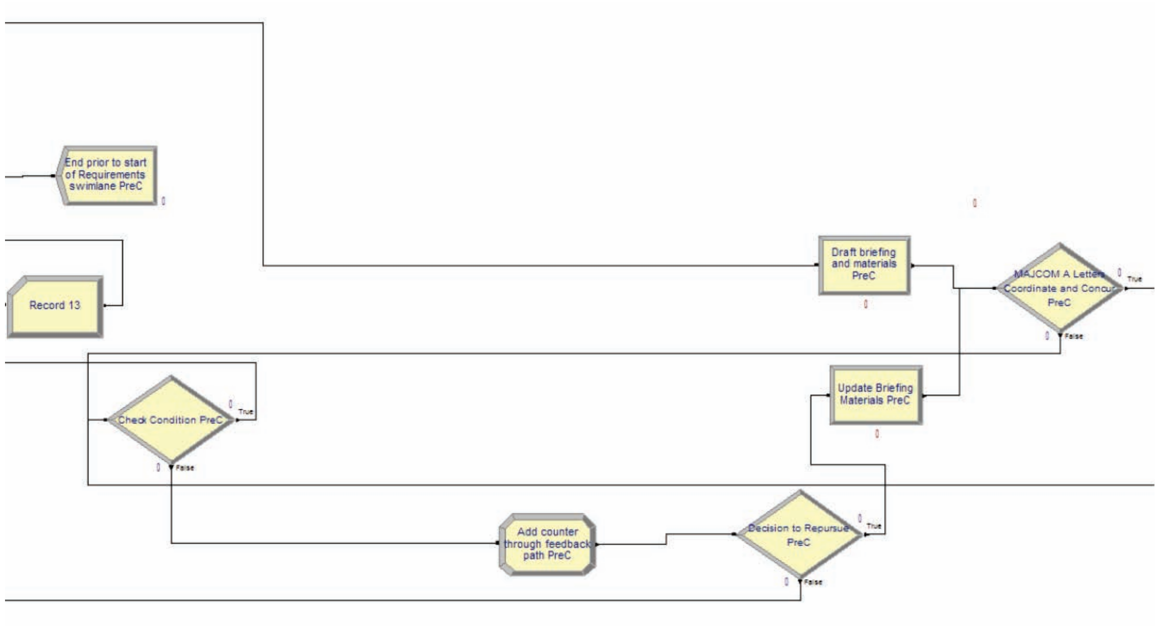

Figure 99: Pre-MS C Entry into formal requirements process at MAJCOM

A task entitled "draft briefing and materials PreC" has a time distribution of 10 days to 40 days, with a most likely value of 31. The source of this information was derived from interview data and validated by JCIDS participant.

A decision point entitled "MAJCOM A Letters Coordinate and Concur PreC" has a probability of 90%. The source of this information is interview and later validation by JCIDS participant. Assuming this was a first time rejection by the MAJCOM “A” Letters, the program proceeds to a “Check Condition PreC” step which is a model artifact checking for a failure flag, it then meets the model artifact entitled “Add counter through feedback path PreC,” which sets a variable indicating a failure. The probability of the next step, a decision point titled, “decision to repursue PreC,” is approximately 85%. If successful, the next step is back toward the MAJCOM “A” letters, through the task “Update Briefing Materials PreC.” This task has a time distribution of 10 to 40 days, with a most likely value of 35 days. If not, the item is killed and archived, with the model artifacts “Record 13,” “End Simulation PreC,” and “End prior to start of Requirements swim lane PreC.”

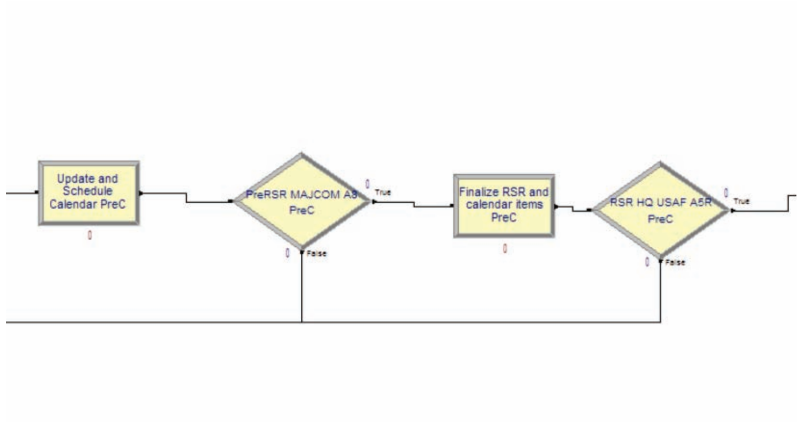

Figure 100: Pre-MS C Requirements swim lane MAJCOM process

A task entitled “Update and schedule calendar PreC” has a time distribution of 3 to 15 days, with a most likely value of 12 days. The source of this information is inference derived from interview data and was validated by JCIDS participant.

A decision point entitled “Pre-RSR MAJCOM A8 PreC” has a probability of 99%. If “false,” then the program proceeds to the “check condition” step as discussed with Figure 99. The source of this information is interview and was validated by JCIDS participant.

A task entitled "Finalize RSR and calendar items PreC" has a time distribution of 21 to 35 days, with a most likely value of 28 days. The source of this information is from an interview and validated by JCIDS participant and the official Document Timeline Calculator.

A decision point entitled "RSR HQ USAF A5R PreC" has a probability of 98%. The source of this information is an interview. If the answer to this decision point is “no”, the process returns to the originator via the “check condition” step. The RSR must include the funding strategy for the remaining phases of Acquisition. If the Joint Potential Designator needs to be updated, it is done at this point. However, the model assumes nothing changes. ACAT I activities have a 100% chance of getting joint interest. ACAT II activities are usually designated as “joint information” and any comments are taken under advisement, while ACAT III activities are designated “independent” AF only and are distributed to

the other services as a courtesy only for comment and review. The joint information was validated by A5 personnel and the official Document Timeline Calculator.

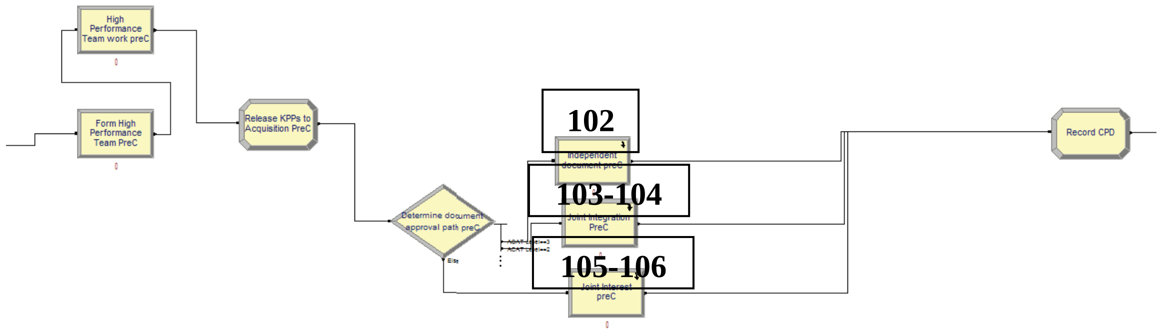

Figure 101: Pre-MS C Requirements swim lane JCIDS process

Returning to the process flow, the next task is called "form high performance team preC" has a time distribution of 30 to 45 days, with a most likely value of 41 days. The source of this information is an interview and validated by JCIDS participant and the official Document Timeline Calculator.

The task called “High-Performance Team (HPT) work PreC" has a time distribution of 5 to 7 days, with a most likely value of 6 days. The source of this information is an interview and later validated by JCIDS participant. The product of this event is a “draft document”.

At this point a variable is set, “Release KPPs to Acquisition preC,” in order to trigger some process work in the acquisition swim lane. This is an artifact of the model, but was discussed as an important issue during the validation activity in discussions with JCIDS participants and acquisition personnel.

At this point, a decision point entitled “Determine document approval path preC” separates the activity into three separate paths to approval depending upon the Joint Potential Designator, e.g. a “rough” surrogate for the ACAT level, of the activity. The model separates these based on the previously designated ACAT level. ACAT I programs go to the “Joint Interest preC” step. ACAT II programs go to the “Joint Integration preC” step and ACAT III programs go to the “Independent Document preC” step.

Following the completion of these steps, which will be discussed in detail shortly, the CPD completion time is recorded as an artifact of the model with the step, “Record CPD.”

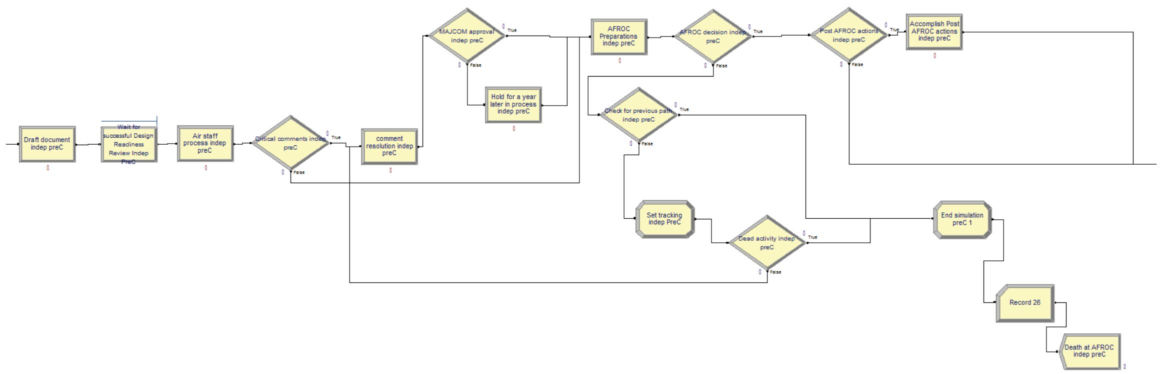

Figure 102: Pre-MS C Requirements Independent Document process

The task called "Draft document Indep preC" has a time distribution of 30 to 60 days, with a most likely value of 55 days and is really an “advanced” draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. Details from the draft document are sent to Acquisition to jumpstart the Acquisition planning activities. The source of this information is an interview and validated by JCIDS participants as well as by the official Document Timeline Calculator. In reality, at this point, information is passed to the acquisition system for preparatory work.

However, before the next step may begin, the Acquisition swim lane must report a successful Design Readiness Review (DRR). The process task “Wait for Successful Design Readiness Review Indep PreC” is a queue waiting for that signal. This information obtained and validated by JCIDS participant.

The task called "air staff processes indep preC” has a time distribution of 21 to 42 days, with a most likely value of 29 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review, with the possibility of an extension, form the basis of the time distribution. The information was later validated by a JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments Indep PreC" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "comment resolution indep preC" has a time distribution of 15 to 45 days, with a most likely value of 45 days. This is where the sponsor resolves O-6[66] level comments. The source of this information is interview and validation by JCID participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval indep preC" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This is represented by the step, "Hold for a year later in process Indep preC." It has a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The task called "AFROC preparations Indep preC" has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point "AFROC decision indep preC" has a probability of 90%. Of those 90%, 20% to 30% will have "actions" (Post AFROC "Go-do" actions) to accomplish, see step "Post AFROC actions Indep preC" and must return to the AFROC within 0 to 15 days, with a most likely value of 11 days. The source is the official Document Timeline Calculator.

[66] O-6: refers to a Colonel or Captain (for the Navy).

If the initial answer at the AFROC is “no,” there is a 99% chance the activity is “dead” and the document is archived. First, there is a check to see if the rejection is the first time or not. This is done at the step entitled, “Check for previous path indep PreC.” The model sets a variable in “Set tracking Indep PreC.” The next step is “Dead activity Indep PreC.” This step has a probability of 99% to kill the program. If not, the program goes back to the step “comment resolution Indep PreC.” During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. Therefore, the path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. Otherwise, the activity is “dead” and this is represented by the model artifacts “End Simulation PreC 1,” “Record 26,” and “Death at AFROC Indep PreC.” The source of this information is an interview as well as review of official process documents. It has been validated by a JCIDS participant.

At this point the CPD is approved and the program resumes the process flow as depicted in Figure 101.

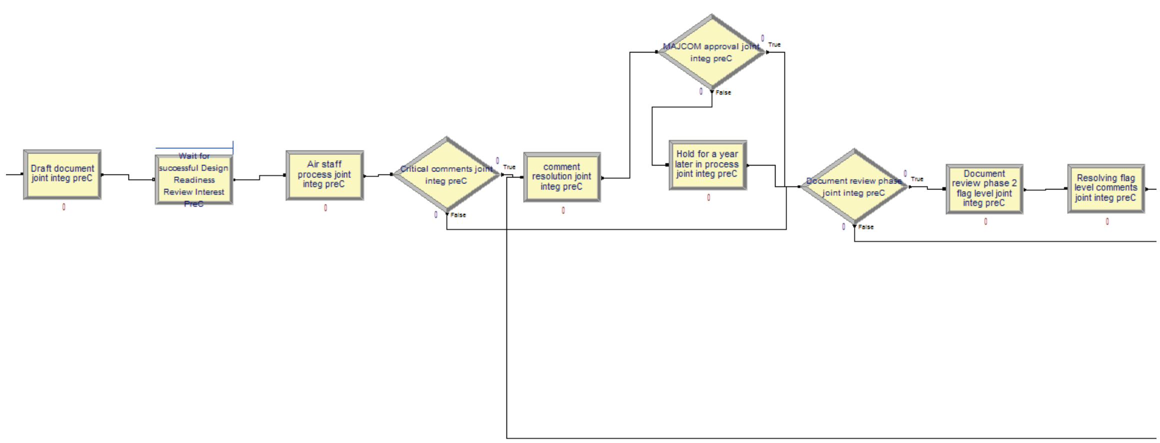

Figure 103: Pre-MS C Requirements swim lane Joint Integration process, Part I

The task called "draft document joint integ preC" has a time distribution of 30 to 60 days, with a most likely value of 55 days. This is really an “advanced” draft of the document previously worked on by

the High Performance team. It is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document Timeline Calculator. In reality, information is passed to the acquisition system for preparatory work.

However, before the next step may begin, the Acquisition swim lane must report a successful Design Readiness Review (DRR). The process task “Wait for Successful Design Readiness Review Interest PreC” is a queue waiting for that signal. This information obtained and validated by JCIDS participant.

The task called "air staff processes joint integ preC” has a time distribution of 21 to 42 days with a most likely value of 29 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review, with the possibility of an extension, form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "Critical comments joint integ preC" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the “Document review phase joint integ preC.”

The task called "comment resolution joint integ preC" has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval joint integ preC” has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on “hold” for a year, probably the result of some “critical comments” that were not immediately resolved. This step is

entitled “Hold for a year later in process joint integ preC” with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The step “Document review phase joint integ preC” is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Interoperability Certification step. The next step, for those that require it, is called the “Document Review Phase 2 Flag level joint integ preC”. This activity is taking place because there were “critical comments” that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 34 days. This has been validated by the Official Document Timeline Calculator.

The next step is another round of the sponsor “Resolving Flag Level Comments joint integ preC.” The time distribution is 15 to 30 days, with a most likely value of 28 days. This was validated by the official Document Timeline Calculator.

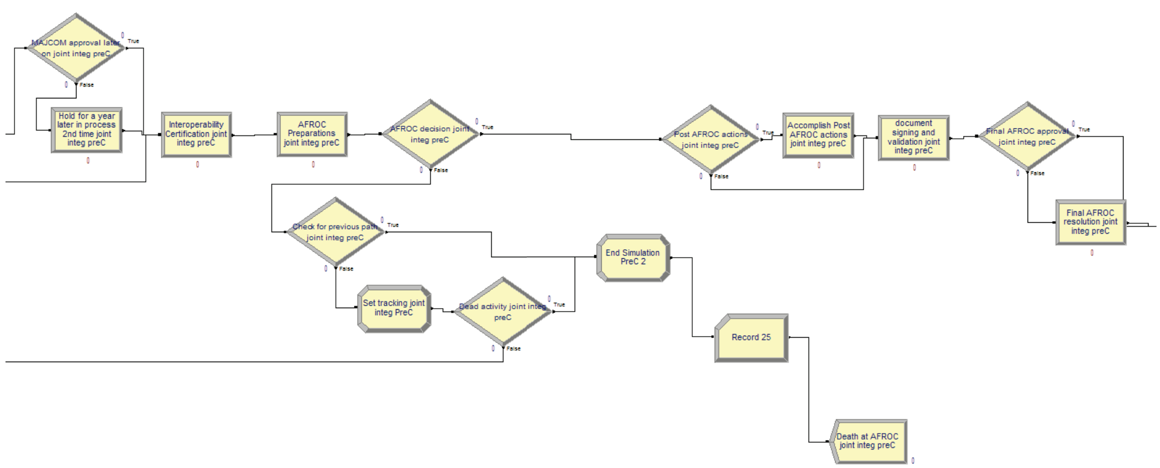

Figure 104: Pre-MS C Requirements swim lane Joint Integration process, Part II

The decision point entitled "MAJCOM approval joint integ preC” has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on “hold” for a

year, probably the result of some "critical comments" that were not immediately resolved. This step is titled "Hold for a year later in process 2nd time joint integ preC." This step has a time distribution of 270 to 300 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step. This step was validated by the official Document Timeline Calculator.

The step called "Interoperability Certification joint integ preC" has a time distribution of 10 to 20 days, with a most likely value of 15 days. The validation came from the official Document Timeline Calculator.

The task called "AFROC preparations joint integ preC" has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point "AFROC decision joint integ preC" has a probability of 90%. Of those 90%, 20% to 30% will have "actions" (Post AFROC "Go-do" actions) to accomplish. This possibility is called "Post AFROC actions joint integ preC." The step "Accomplish Post AFROC actions joint integ preC" includes returning to the AFROC within 0 to 15 days, with a most likely value of 11 days. If the initial answer at the AFROC decision is "no," there is a 99% chance the activity is "dead" and the document is archived. During validation of the model, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. For the logic of the model to remain intact, the program is first checked to see if it has previously been rejected. If not, a variable is set. Then it meets the step "Dead activity joint integ preC" with a 99% probability of being killed outright. If not, it is then set back to the comment resolution step. Otherwise, the program is killed via the model artifacts "End Simulation preC 2," "Record 25," and "Death at AFROC joint integ preC." The source of this information

is an interview, the official Document Timeline Calculator as well as review of official process documents. It has been validated by JCIDS participant.

The step “Document signing and validation joint integ preC” is because the AFROC then requires 14 to 30 days, with a most likely value of 26 days, to get the document signed and validated across the AF structure. The step “Final AFROC approval joint integ preC” has a 99% chance to be approved by the AFROC without issues. The remaining 1% have issues requiring resolution, e.g. step “Final AFROC resolution joint integ preC,” typically requiring 42 to 60 days to resolve, with a most likely value of 48 days.

At this point the CPD is approved and re-enters the process flow as depicted in Figure 101.

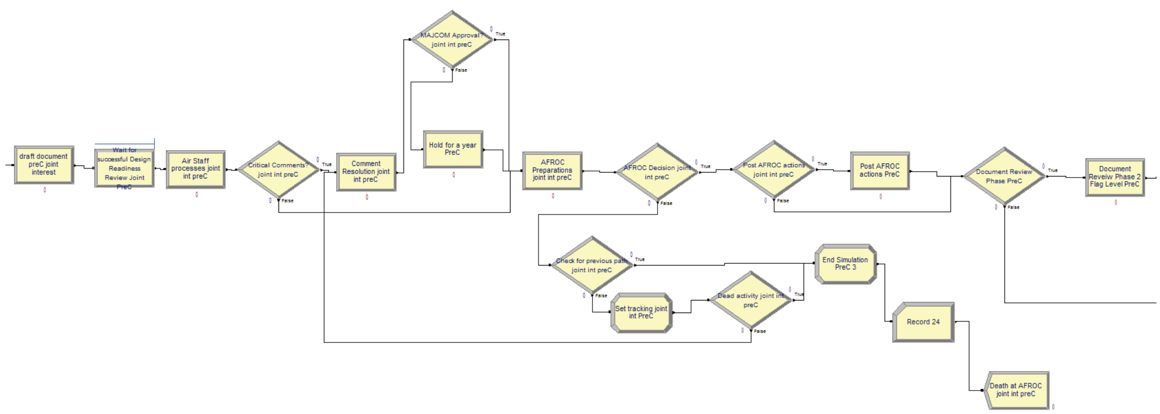

Figure 105: Pre-MS C Requirements swim lane Joint Interest process, Part I

The task called "draft document preC joint interest" has a time distribution of 30 to 60 days, with a most likely value of 55 days. It is really an “advanced” draft of the document previously worked on by the High Performance team. This is the time for internal coordination and clean-up. The source of this information is an interview and validated by JCIDS participant as well as by the official Document Timeline Calculator. Information is also passed to the acquisition system for preparatory work, but is not done explicitly in this model.

However, before the next step may begin, the Acquisition swim lane must report a successful Design Readiness Review (DRR). The process task “Wait for Successful Design Readiness Review Joint PreC” is a queue waiting for that signal. This information obtained and validated by JCIDS participant.

The task called "air staff processes joint int preC” has a time distribution of 21 to 42 days, with a most likely value of 25 days. The source of this information is interview and official documentation. A few days of internal processing time and a maximum 21-day review, with the possibility of an extension, form the basis of the time distribution. The source of this information was validated by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "critical comments? Joint int preC" has a probability of 95%. The source of this information is an interview and validated by JCIDS participant. If there are no critical comments, the task proceeds to the AFROC Preparations step.

The task called "Comment resolution joint int preC” has a time distribution of 15 to 45 days, with a most likely value of 30 days. This is where the sponsor resolves O-6 level comments. The source of this information is interview and validation by JCIDS participant and the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval? Joint int preC” has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is “no,” the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on “hold” for a year, probably the result of some “critical comments” that were not immediately resolved. This is represented by the step “hold for a year PreC” with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

The task called “AFROC preparations joint int preC” has a time distribution of 30 to 60 days, with a most likely value of 45 days. The source of this information is an interview and the official Document Timeline Calculator.

The decision point “AFROC decision joint int preC” has a probability of 90%. Of those 90%, 20% to 30% will have “actions” (Post AFROC “Go-do” actions) to accomplish. This is represented by “Post AFROC actions joint int preC.” Those programs with actions to accomplish, e.g. “Post AFROC actions” must return to the AFROC. It has a time distribution of 0 to 15 days, with a most likely value of 11 days. If the initial answer is “no,” there is a 99% chance the activity is “dead” and the document is archived. During validation, the source indicated he had never seen anything go back through the AFROC a 2nd time based on his 25+ years of experience. This is represented by first checking to see if the program had been rejected at the AFROC before. If not, a flag was set, e.g. “Set tracking point int preC.” Then the decision point, “Dead Activity joint int preC” has a 99% probability that the program would be killed anyway. The path taken by the less than likely 1% of documents would be back to the MAJCOM for approval through the comment resolution process and follow the normal process beyond that. The source of this information is an interview as well as review of official process documents. It has been validated by JCIDS participant.

The next step is applicable to 50% of the documents seeking approval. The other 50% proceed directly to the Functional Capabilities Board. This is called the “Document Review Phase 2 Flag level PreC.” This activity is taking place because there were “critical comments” that were not resolved during the initial round and the MAJCOM sponsor determined to press ahead anyway. This step has a time distribution of 21 to 42 days, with a most likely value of 38 days. This has been validated by the Official Document Timeline Calculator.

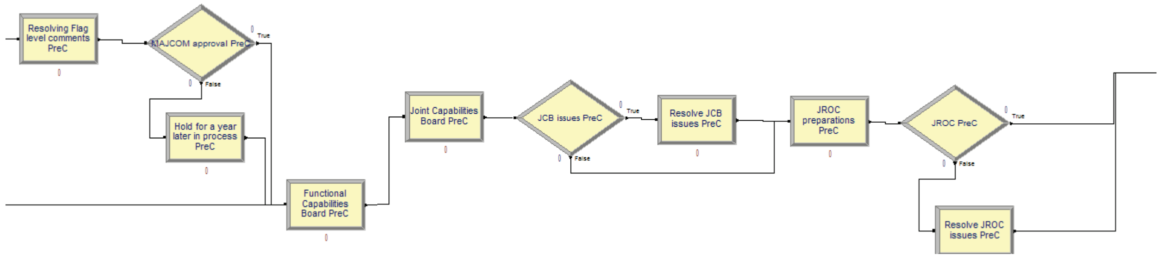

Figure 106: Pre-MS C Requirements swim lane Joint Interest process, part II

The next step is another round of the sponsor "Resolving Flag Level Comments PreC." The time distribution is 15 to 30 days, with a most likely value of 27 days. This was validated by the official Document Timeline Calculator.

The decision point entitled "MAJCOM approval PreC" has a probability of 99%. The source of this information is interview and later validation by JCIDS participant. If the answer is no, the next step remains comment resolution and information is passed into the budgeting and programming system to deal with the financial ramifications. Usually, this means the activity is put on "hold" for a year, probably the result of some "critical comments" that were not immediately resolved. This step is called "Hold for a year later in process preC" with a time distribution of 270 to 365 days, with a most likely value of 300 days. If the answer is yes, the activity proceeds to the next step.

Next is the "Functional Capabilities Board PreC" for preparation and validation. This step has a time distribution of 7 to 21 days, with a most likely value of 14 days. This is considered a very difficult "scrub" of the activity. The model is programmed to assume all documents proceed without problem to the next step[67]. This step was validated by JCIDS participant, A5 participant, and the official Document Timeline Calculator.

[67] Unfortunately, this is not the case. This error was discovered while preparing this dissertation for publication. The actual data is that 70% that meet the board go on to the next step. The other 30% have issues to resolve, typically taking 10 to 20 days, with the most likely value of 15 days before reporting back to the FCB. However, the likelihood of another set of issues arising is so remote that it is assumed to have a probability of zero. Given that the magnitude of this error is on the order of a handful of days versus the end result on the order of thousands of days, it is judged that the overall results in the dissertation are still valid.

The “Joint Capabilities Board PreC” requires another 7 to 21 days in preparation after the FCB, with a most likely value of 14 days. Following this is logic, titled “JCB issues PreC,” where 85% that meet the JCB board go on to the next step. The remaining 15% have issues to resolve, titled “Resolve JCB issues PreC,” typically taking 10 to 20 days, with a most likely value of 15 days, before reporting back to the JCB. However, the likelihood of another set of issues arising at the second meeting of the JCB is so remote that the model does not consider it at all.

The JROC requires 14 to 30 days, with a most likely value of 25 days, in preparations, e.g. mostly calendar scheduling issues, as noted in the step titled, “JROC Preparations PreC.” At the decision point “JROC PreC,” 98% are approved without issues. The remaining 2% have issues requiring resolution, typically requiring 42 to 60 days to resolve, with a most likely value of 51 days, as shown in the process step “Resolve JROC issues PreC.”

At this point the CPD is approved and the program resumes the process flow as depicted in Figure 101.

Following the approval of the CPD, it may become apparent that the CPD needs to be updated. The formal process allows for this possibility. CPD updates are:

> “often a result of unforeseen program events (i.e., altering KPPs, budget cuts, significant schedule delays, technology maturity, leadership intervention, acquisition strategy changes, etc.). Sponsors may update the CPD before or after Milestone C. Document preparation, format, review, validation, approval, and archiving of subsequent updates are normally the same as the original CPD.” (AFI10-601, pg 39)

Joint interest CPDs must go through the formal process to the JROC for approval. There is some latitude to eliminate some staffing steps to get to the JROC, but that is by special request. All other CPDs do not need to go through the joint process for approval.

Regardless of either having an updated CPD or the initial CPD done, the goal of the requirement’s system is to have the CPD delivered to the MDA no later than 60 days prior to the

scheduled MS B. This is another potential quality check to test in the model and is reserved for future work.

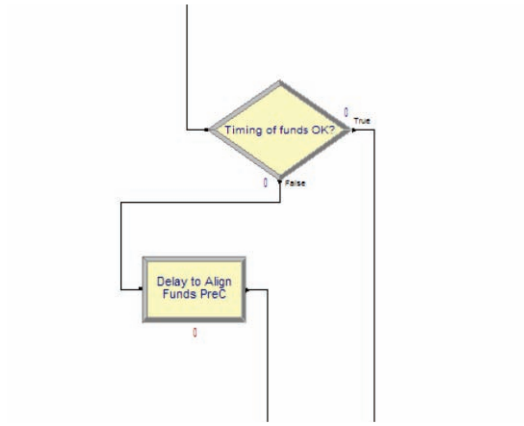

Figure 107: Pre-MS C PPBE Early funding check

The PPBE in this phase does not change except that in addition to dealing with RDT&E dollars, procurement dollars must be fully programmed prior to Milestone C, enough so that the program is "fully funded" in the FYDP for both colors of money. This will be discussed later.

Immediately after declaring MS B, the decision point "Timing of Funds OK?" is reached. The probability of this step is 55%. This decision point acknowledges that with program slips and delays it is possible that the "fully funded" proposition in the FYDP may no longer be the case, particularly if a large sum of money was assumed to be obligated and expended in the first year of the contract award. If "yes", back to the Acquisition swim lane. If "no", a process task entitled, "delay to align funds PreC" occurs. The time distribution of this delay is 30 to 75 days, with a most likely value of 35 days. This situation is shorter than most would realize due to the negotiating that occurs between other PEMs, etc., in the forms of "puts", "takes" and payback periods, otherwise known as creative financing[68].

[68] The terms "put," "take," and "payback periods" are used within the PEM community. A "put" is akin to putting another's money down on a program, while a "take" is taking money from a program. The "payback period" is the period of time that moneys that were "put" or "taken" are readjusted among the different programs so that the result is equitable.

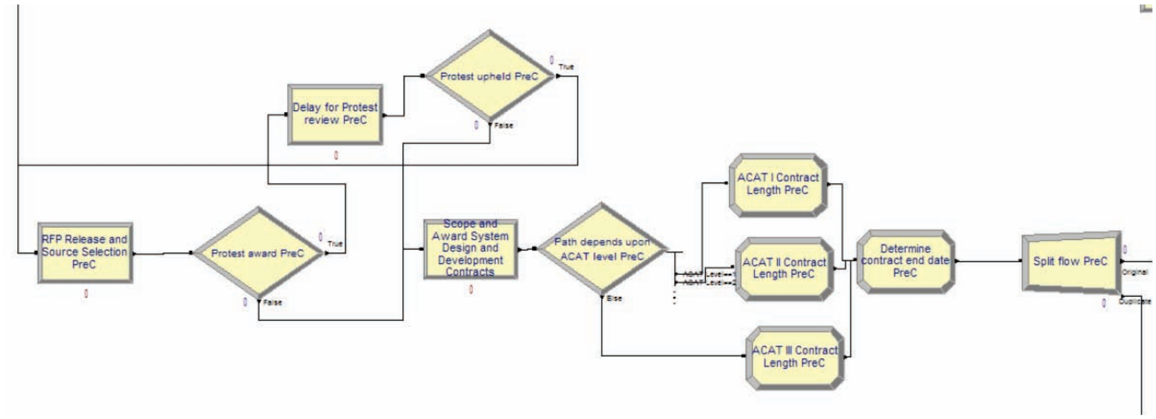

Figure 108: Pre-MS C early acquisition swim lane activities

The first step in this phase is entitled "RFP release and Source Selection PreC". It has a time distribution of 90 to 180 days, with a most likely value of 160 days. The main assumption is that there will be no sole source awards and that sole source options are not part of the acquisition strategy completed in the last phase. Funding must be in place along with the MS B declaration. The source for this information is experience, interviews and documentation. It was validated via acquisition personnel from SAF/AQ.

A decision point entitled "Protest award PreC" has a probability of 20%. The source of this information is open source materials, media, and other documents. If "yes" a delay is encountered while appropriate agencies review the process. The delay, titled "Delay for Protest review PreC" can be between 30 and 60 days, with a most likely value of 50 days. Afterwards, a decision point entitled "Protest Upheld PreC" is reached. Based on feedback from SAF/AQ personnel during the validation of the model, the probability of this step is 40%. If "yes" the source selection process is repeated. If "no", the process task of "Scope and Award System Design and Development contracts" is next.

A task entitled "Scope and Award System Design Development contracts" has a time distribution of 30 to 120 days, with a most likely value of 100 days. This duration is dependant upon the complexity of the required task as well as if the study can be exercised as a task or option on an existing contract vehicle or if a sole source or other contracting mechanism is required. However, speed is favored. The

time duration associated with the length of the contract for technology development has a distribution based upon the ACAT level of the program. ACAT I programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 1980 days. ACAT II programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 1365 days. ACAT III programs have a contract duration ranging from 365 to 2190 days, with the most likely value of 480 days. The source of this information is by inference and experience. Additional credence can be found in official process documentation. Validation of these assumptions was received from personnel in SAF/AQ.

A bookkeeping actifact of the model is used to calculate when the original end date of the contract should be. This variable is used in some background calculations used to determine schedule growth, etc.

The process flow continues to two different places. First, it goes into the Contractor Swim Lane – reflecting the work a contractor is doing - to be described later. Second, parallel processes are initiated to prepare for moving the program into the next phase of development.

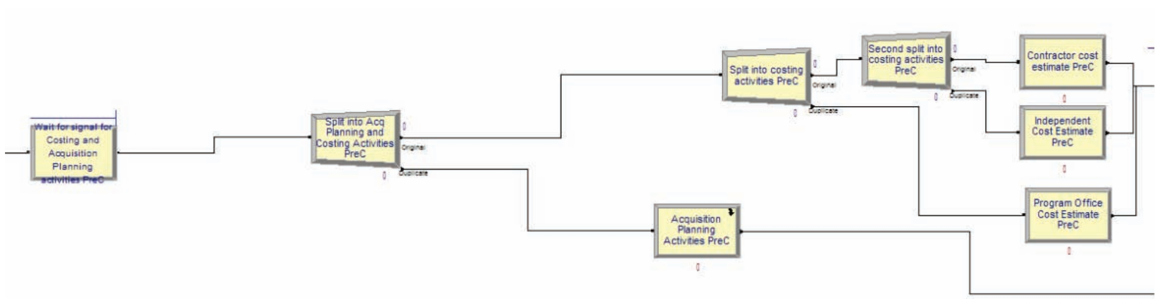

Figure 109: Pre-MS C Acquisition costing and acquisition planning

From the split flow in Figure 108, the first activity is a queue entitled, "Wait for signal for Costing and Acquisition Planning activities preC." This signal will come from the contractor swim lane indicating a certain percentage of the contract is elapsed, which will be discussed hereafter. It is a time delay as these activities will not start until near the end of a contract and in preparation of a Milestone C declaration.

The next step is an artifact of the model, requiring parallel processing. This allows both the cost exercises as well as the acquisition planning activities to proceed simultaneously. The branch going to the cost area will be split again to allow three separate costing activities to proceed in parallel.

The process task entitled “Acquisition Planning Activities PreC” has a time distribution of 120 to 250 days, with a most likely value of 240 days for ACAT I programs. For ACAT II or ACAT III programs, the time distribution is 120 to 250 days, with a most likely value of 185 days. The source of this information is interviews and published timelines and official documentation. It was validated by acquisition personnel.

The three separate costing tasks, “Program Office Cost Estimate PreC” has a time distribution of 60 to 90 days, with a most likely value of 65 days. The “Contractor Cost Estimate PreC” has a distribution of 45 to 90 days, with a most likely value of 50 days. The process task, “Independent Cost Estimate PreC” has a distribution of 30 to 60 days, with a most likely value of35 days. The source of this information is acquisition personnel and validation was obtained from other acquisition personnel.

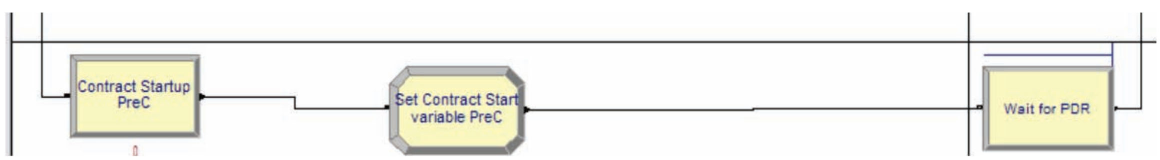

Figure 110: Pre-MS C Contract start-up activities

The initial process step in this swim lane is called “Contract Start-up PreC.” It has a time distribution of 30 to 45 days, with a most likely value of 42 days. This is regardless of the size and complexity of the overall task. This consists of the preliminary efforts to staff the activity and organize appropriately. The source of this information is experience and source documentation. It was validated by acquisition personnel.

As an artifact of the model, a variable is set to record the “start” of the contract. Next, a queue is met entitled, “Wait for PDR.” This queue waits for a signal from the contractor swim lane. The signal is triggered after a certain period of contract time has elapsed. The specifics on the “Wait for PDR”

signal will be discussed later. This information was discovered during the validation phase of the model when working with acquisition personnel.

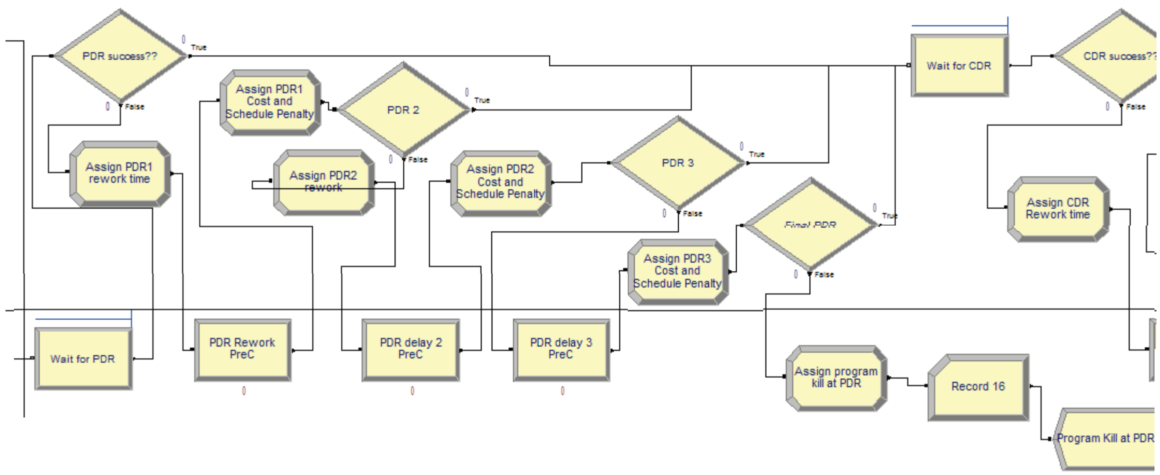

Figure 111: Pre-MS C Early Systems Engineering Preliminary Design Review activity

"Systems Engineering" and "Test and Evaluation" plays a large role in this phase of activity in the model. The model acknowledges these activities where appropriate as it assists with the management of the contractor activity. The first major activity is called the "Preliminary Design Review" or PDR. The review begins at a certain amount of time elapsed in the contract depending upon the ACAT level, which is triggered through the "Wait for PDR" queue discussed earlier. The model calls the first PDR check as "PDR success??" The probability of passing this event successfully is 25%. This information was received during the validation phase of the model from acquisition personnel working closely with the acquisition policy shop at SAF/AQ. If "yes" then the contract schedule is not affected.

If "no", the rework time variable is assigned as 15% of the elapsed contract time. The design work is re-accomplished in the step "PDR Rework PreC," with a time duration equal to the rework variable. Then a cost and schedule penalty is added to the existing schedule. The artifact of "Assign PDR1 Cost and Schedule Penalty" takes the rework time and adds it to the current contract length. It also adds 1% contract cost.

Another PDR is met, titled “PDR 2” with the probability of approval rising to 50%. If “yes”, the next review occurs at the next scheduled interval. If “no”, the “Assign PDR2 rework” is given a value of 50% of the previous re-work time. The task “PDR delay 2 PreC” takes this 50% duration to accomplish. Next, the contract cost and schedule penalty is assigned via “Assign PDR2 Cost and Schedule Penalty”. The schedule penalty is the 50% rework time added to the current contract length and another 1% cost penalty is added to the cost variable.

Another PDR, “PDR 3” is met with the probability rising to 90%. If “yes,” the next review occurs at the next scheduled interval. If “no”, the design work, e.g. “PDR delay 3 PreC,” is re-accomplished taking the previous step’s re-work time. Next the contract cost and schedule penalty is assigned via “Assign PDR3 cost and schedule penalty.” It is the same amount assigned in the previous action.

A final PDR is met with the probability rising to 99%. If “yes,” the next review occurs at the next scheduled interval triggered through the Contractor swim lane. If “no”, the program is ended, via the model artifacts “Assign program kill at PDR,” “Record 16,” “Program Kill at PDR.”

The process then waits until the “Wait for CDR trigger” is received from the contracting swim lane.

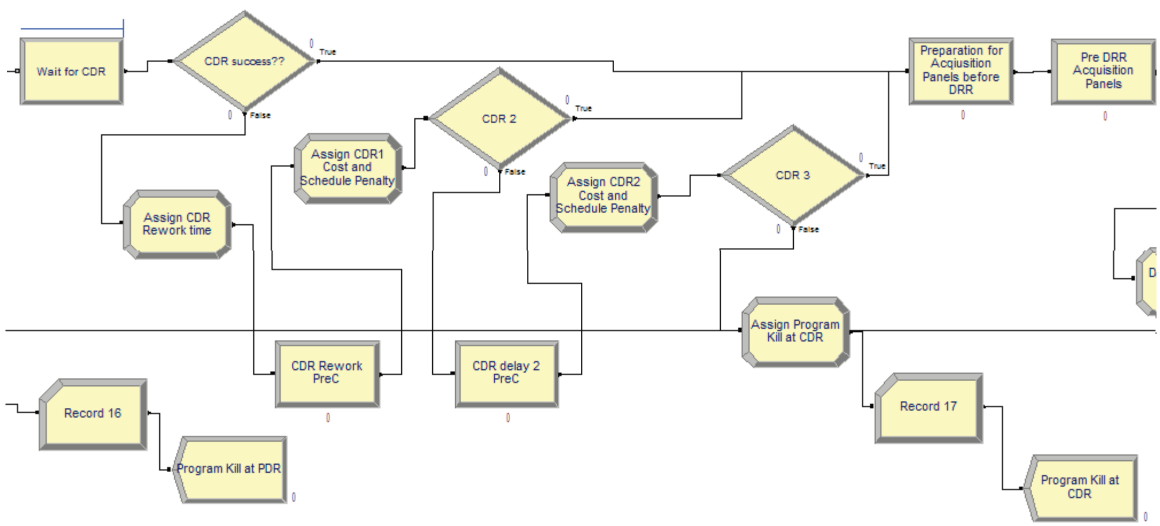

Figure 112: Pre-MS C Acquisition swim lane Critical Design Reviews

When the signal to proceed comes, the next engineering review is the Critical Design Review or CDR. This review begins at a time in the contract duration depending upon the ACAT level. This test is accomplished in the Contractor swim lane. The probability of meeting this milestone, named "CDR success??" is 70%. If "yes", the activity proceeds to the next scheduled activity.

If "no", the design work is re-accomplished. First the rework time is calculated in the "Assign CDR Rework time" task. The rework time is calculated as 15% of the elapsed time of the current contract. The rework time is then taken in the step, "CDR Rework PreC." Next, "Assign CDR1 Cost and Schedule penalty[69]" is done by adding the rework time to the contract length and end dates, as well as adding 1% to the contract cost.

Another CDR, "CDR 2," is met with the probability of approval rising to 90%. If "yes", the next review occurs at the next scheduled interval.

If "no", there is a delay incurred, titled "CDR delay 2 PreC," which takes 50% of the previous re-work time. Afterward, penalties are assigned by the artifact "Assign CDR 2 Cost and Schedule Penalty[70]." This is done by adding 50% of the rework time to the contract length and end dates, as well as adding 1% to the contract cost.

The last and final chance to complete a CDR is met at "CDR 3" with the probability rising to 99%. If "no", the program is ended via the artifacts of "Assign Program Kill at CDR," "Record 17," and

[69] In preparing the documentation of the model and this Appendix, it was noted that there was an error in one of the formulas. Instead of adding the rework time to the contract end date, the model was adding the PDR rework time to the contract end date. It is the opinion of the author that the dissertation results remain valid because the contract end date variable was never implemented elsewhere in the model. Even if it were, the amount of error introduced would be on the order of at most, several hundred days whereas the results are on the order of thousands of days.

[70] In preparing the documentation of the model and this Appendix, it was noted that there was an error in one of the formulas. Instead of adding the rework time to the contract end date, the model was adding the PDR rework time to the contract end date. It is the opinion of the author that the dissertation results remain valid because the contract end date variable was never implemented elsewhere in the model. Even if it were, the amount of error introduced would be on the order of at most, several hundred days whereas the results are on the order of thousands of days.

“Program Kill at CDR.” If “yes”, the process preparing for the Design Readiness Review begins, including the acquisition panels that will approve further development.

The task “Preparation for Acquisition Panels before DRR” has a time distribution of 25 to 60 days, with a most likely value of 50 days. Mostly, this time is spent to synchronize calendars with the fixed acquisition panels.

The task “Pre DRR Acquisition Panels” has a time distribution of 3 to 15 days, with a most likely value of 12 days. The DRR tasks were highlighted and represent an addition to the model by those personnel in acquisition that helped with the validation phase of the dissertation.

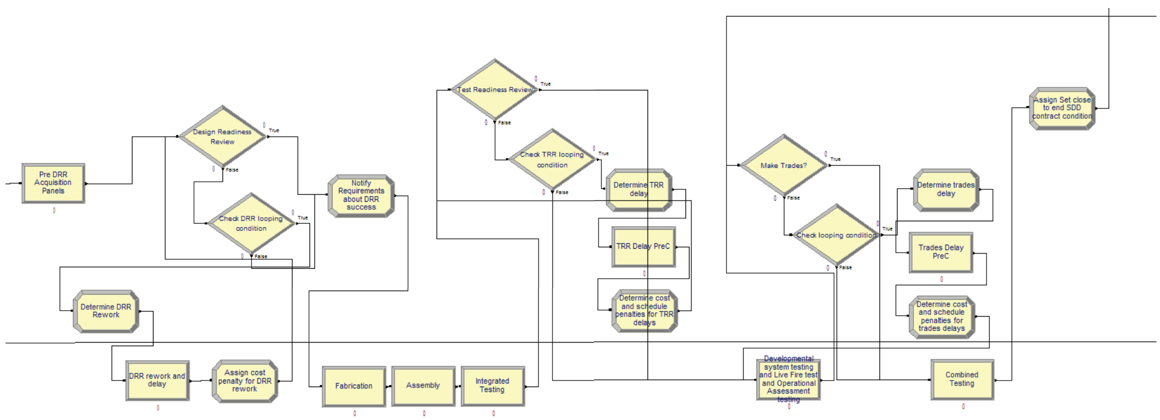

Figure 113: Pre-MS C Acquisition swim lane fabrication, assembly and testing

A decision point entitled, “Design Readiness Review” which includes MDA approval has a probability of 90%. If “no” an artifact of “Check DRR looping condition” is met. This point checks to see if the program has been through the loop before.

If not, the assignment of “Determine DRR rework” is done. This is the result of a triangular distribution ranging from 30 to 180 days, with a most likely value of 150 days. Next, the task of “DRR rework and delay” is accomplished. Its duration is the result of the triangular distribution. Next, the model will “Assign cost penalty for DRR rework” by adding the DRR rework time to the contract length and contract end date, along with incurring an automatic 1% cost penalty. A flag is also set indicating the program has completed the “loop.” Then the process returns to the Design readiness review.

If the DRR is successful or if the “Check DRR looping condition” has been used before, then a variable is set to “notify requirements about DRR success” and the program proceeds further.

The next step is “Fabrication” in the contractor swim lane. It has a triangular distribution of 6% to 11% of the original contract length, with a most likely value of 10% of the original contract length. This was validated by acquisition personnel.

“Assembly” is the next step. It has the identical triangular distribution profile as the previous step. “Integrated testing” follows. It has a triangular distribution profile based upon a percentage of the original contract length and is also dependent upon its ACAT level. For ACAT I programs, the range is 15% to 26% of the original contract length, with 25% of the original contract length being the most likely value. For ACAT II and III programs, the range is 7% to 11% of the original contract length, with 10% of the original contract length being the most likely value.

Next, the “Test Readiness Review” comes. It has a probability of 70% passing and proceeding on to the next testing event. If “no,” the artifact “Check TRR looping condition” looks to see if the TRR has been met before. If not, then the appropriate “Determine TRR delay” is assigned. It is a triangular distribution from 30 to 180 days, with 60 days being the most likely value. Next, a process task called “TRR Delay PreC” is met. This task is equal to the delay assigned. The last step of the loop, “Determine cost and schedule penalties for TRR delays,” adds the TRR delay to the contract length and the contract ending date along with incurring an automatic 1% cost penalty to the contract cost. A flag is set indicating the program has completed the loop. The program then returns to the Test Readiness Review.

If the loop has been completed once already or the TRR is successful, the next step is “Developmental system testing and Live Fire test and Operational Assessment.” It has a triangular time distribution based on the original contract length and the ACAT level. For ACAT I programs, the time distribution ranges from 18% to 27% of the original contract length, with 25% of the original contract

length being the most likely value. For ACAT II and ACAT III programs, the time distribution ranges from 10% to 17% of the original contract length, with a most likely value of 15% of the original contract length. This was validated by acquisition personnel.

After developmental testing in the contractor swim lane, a decision point to “make trades?” is met. This has a probability of 50%. Unfortunately, historical trends indicate that many changes are desired at this point. If trades are wanted, the looping condition, “Check looping condition” is checked. If the program has never made trades before, the next step is to “determine trades delay.” It has a distribution of 30 to 180 days, with a most likely value of 60 days. Next the task “trades delay PreC” is met. Afterward, the step “Determine cost and schedule penalties for trades delay” happens with the trades delay being added to the length of the contract and the contract ending date, along with incurring an automatic 2% cost penalty to the contract costs. Then the process repeats “Developmental system testing and Live Fire test and Operational Assessment testing.”

If no trades are made or the loop has already been completed once, the step “combined testing” is met. This step has a triangular distribution based upon the length of the original contract regardless of ACAT level. The range is from 7% to 11% of the original contract length, with the most likely value of 10% of the original contract length.

Finally, upon completion of all of these testing activities, “Assign set close to end SDD contract condition.” This simply signals other activities in the model that the contract is essentially near its end.

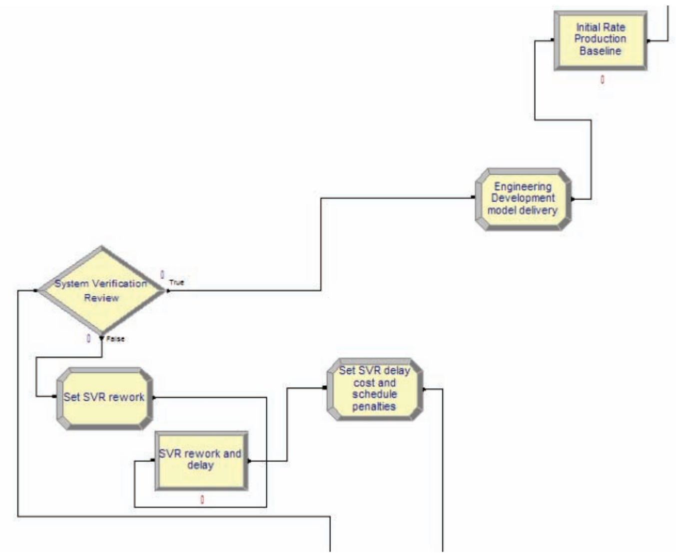

Figure 114: Pre-MS C Acquisition swim lane System Verification Review

Upon completion of testing, the program comes to the "System Verification Review." It has a probability of 85%. If the program fails, the artifact labeled "Set SVR rework" is met. It has a triangular distribution of 30 to 180 days, with a most likely value of 160 days. The step "SVR rework and delay" requires the rework time. Next, the artifact "Set SVR delay cost and schedule penalties" is met. This adds the rework time to the contract length and the contract end date while the cost incurs a cost penalty 5% the side of the current contract value. Following this point, the program returns to complete the "Make trades" step.

If the program is successful at SVR, "Engineering Development model delivery" sets a flag annotating this event. At this point, the "Initial Rate Production Baseline" is set in an activity ranging from 15 to 35 days, where the most likely value is 30 days. The source of the SVR activities was official process documentation and was later verified by acquisition personnel.

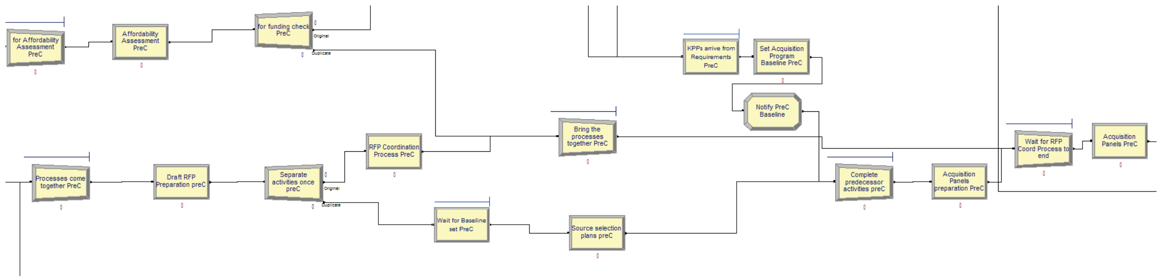

Figure 115: Pre-MS C Acquisition swim lane preparations for Acquisition Panels

Only upon completion of the three cost estimates, as noted by the queue titled "for Affordability Assessment PreC", is the "Affordability Assessment PreC" done. The time duration for this assessment is approximately 120 to 180 days, with a most likely value of 160 days. The source of this information is official documents and by inference. This was validated by acquisition personnel.

An artificial artifact of the model is inserted here to check for funding, and a penalty assessed if it is not available. This will be discussed later.

With the completed of the acquisition planning activities and the system verification review completed, both shown previously, the process task, "Draft RFP Preparation PreC" may begin. It takes 10 to 20 days, with a most likely value of 17 days. Typically there is some effort to waive the firm prerequisites and preliminary results will be used, especially if trying to meet a "target" MS C date goal, but the model does not attempt to account for this variation. The source of this information is experience and source documents, and was subsequently validated by acquisition personnel. Outputs from this step go to two different tasks – one related to the RFP coordination process, and another to the development of the Source Selection plans.

A process task called "RFP coordination process PreC" has a time distribution of 25 to 50 days, with a most likely value of 45 days. Some of this coordination is done within the branch of service doing the acquisition and some of it is done with industry. The source of this information is interviews, experience and source documents. It was later validated by acquisition personnel.

There is a queue, “wait for baseline set preC,” that must be released by the proper trigger before proceeding to the process task, “source selection plans preC” which has a time distribution of 30 to 65 days, with a most likely value of 60 days. This time duration is influenced by the current state of the contractor’s work which impacts the final requirements that are going to be part of the future contracting effort. The source of this information is experience and published timelines. Validation was provided by acquisition personnel.

An artifact of the model brings the RFP coordination process and completion of the cost estimates together.

Upon return from the funding check, and also as the CPD is being finalized in the requirements swim lane, the approved KPPs will be released to the Acquisition swim lane. At this point the Acquisition program baseline will be set. This marks the “official” baseline for the remaining program and will be the benchmark against which all further development from this point will be measured. It is not unusual for these attributes to be set based on draft or preliminary documents. The task has a time distribution of 10 to 30 days, with a most likely value of 25 days. A model artifact “notify PreC Baseline” is set. The source of this information is official documents and inference. It was later validated by acquisition personnel.

An artifact of the model brings two parallel paths together with the activity called “Complete predecessor activities preC.” These paths are from the funding check and the source selection plans activities.

The process task for the preparation for the Acquisition Panels has a time distribution of 40 to 60 days, with a most likely value of 56 days for ACAT I programs. For the ACAT II and ACAT III programs, the preparation requires 15 to 30 days, with a most likely value of 25 days. The majority of this time is to get in synchronization with the set calendar of these panels. Most of the “work” has already been

done prior to this time in previous tasks. The source of this information is an interview and source documents. It was later validated by acquisition personnel.

Once the RFP Coordination process is complete, along with the acquisition panel preparations, the process task entitled "Acquisition Panels PreB" is met. It has a time distribution of 15 to 35 days, with a most likely value of 30 days.   The time distribution allows for delays and resolution of last minute issues in these events.

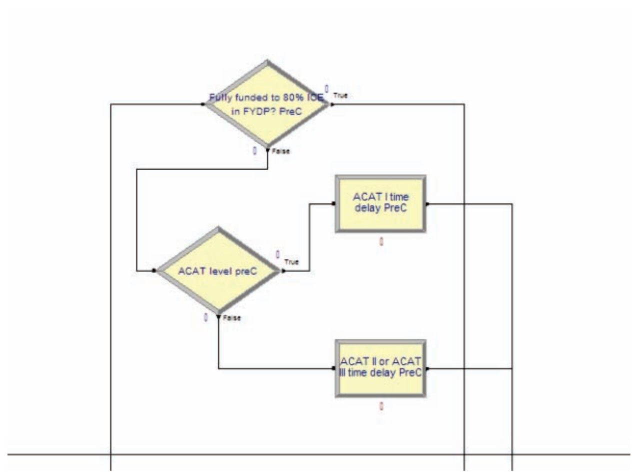

Figure 116: Pre-MS C PPBE Funding check

Despite the discrete nature of the model the PPBE is constantly seeking updates to the cost and schedule updates for the system. The response of the model to this input is a decision point entitled "Funds set aside for next phase in FYDP at 80% of ICE amount PreC". This decision point has a probability of 90%. This means that the Air Force is making an investment decision into the development of this concept. The irony is that the decision to fund at this level is made within the corporate structure of the Air Force, e.g. within the Budgeting and Programming system, and the acquisition System with its accompanying Milestone decision is merely a ratification of the previously taken action by the Air Force.

If the decision is "no", a time delay is incurred. The time delay task has a time distribution of 30 to 180 days, with a most likely value of 120 days for ACAT I programs. For ACAT II and ACAT III

programs, the time distribution is 90 to 270 days, with a most likely value of 225 days. The reason for these distributions is that significant resources have been expended by the Air Force to date and there is tremendous institutional pressure to continue the development of the concept. This does have a direct impact on reaching Milestone C – the program must be fully funded, e.g. at 80% of the ICE amount, in order to proceed further. It is even more important at this point because not only must the moneys be there for RDT&E dollars, but also for Production dollars, which will be used predominately post-milestone C. In reality, this means that if the money still isn't there, having the plan in place prevents further delays, but it still doesn't guarantee the program will be fully funded. Furthermore, it is also likely the program is funded to the Program Office Cost estimate, which is historically lower than ICE estimates.

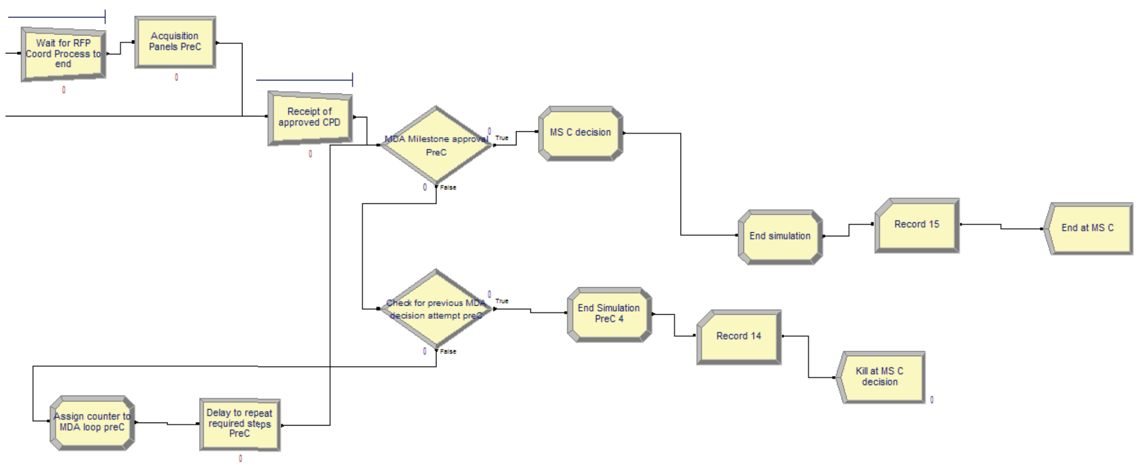

Figure 117: Pre-MS C Acquisition swim lane Milestone B decision

Upon formal receipt of the approved CPD from the requirements swim lane, the milestone decision can be made. A decision point entitled "MDA Milestone Approval PreC" has a probability of 99%. This probability relies upon the confluence of all previous tasks preparing for the next phase of acquisition development and the approved CPD from the requirements swim lane. The source of this information is official documents and subsequent validation from acquisition personnel.

If "no", a check is made to see if the program has failed previously. If so, the program is killed. If not, a counter is attached to the program to indicate the milestone failure. Officially, the process returns to the "Preparation for Acquisition Panels" step to repeat the entire process from there. However, the MDA can reject the program for various reasons and the personnel working the program would go back to the portions that needed to be redone and fix them. Therefore, an artificial step entitled "Delay to repeat required steps PreC," was created. It has a time distribution of 60 to 180 days, with a most likely value of 120 days. After completion of this step, the program then returns to the MDA decision point. If the program is rejected twice, the process ends, as evidenced with the model artifacts of "End Simulation PreC 4," "Record 14," and "Kill at MS C decision." In essence, this means the sponsoring MAJCOM will withdraw its support and/or funding and/or restructure the program by going back to the beginning of the overall process. If the MDA approves the program, Milestone "C" is declared. The "program" contains all of the information, approval, and consent needed to proceed into the next phase of activity. Since Milestone C was the declared goal of the model's scope, the model will also end at the "Milestone C decision" with model artifacts of "End simulation," "Record 15," and "End at MS C."

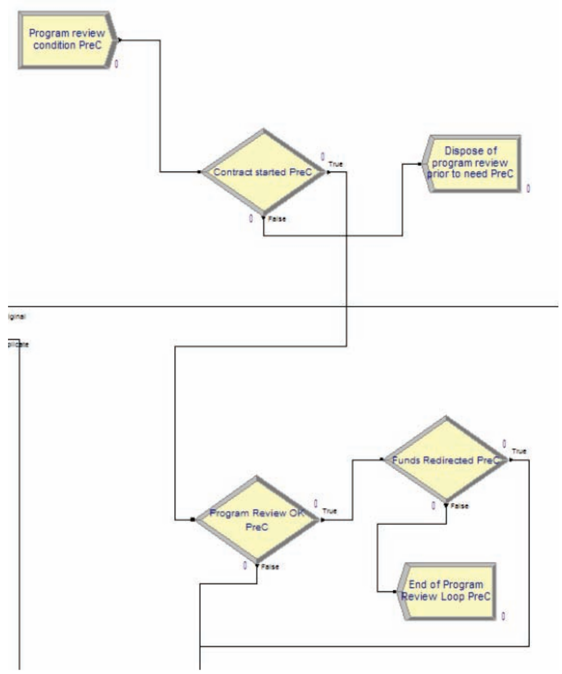

Figure 118: Pre-MS C Acquisition swim lane financial uncertainty engine

Contract management is not explicitly modeled. However, several other activities are modeled that can be used a surrogates for this activity. The first step in this surrogate activity mentioned is the generation of a "Program Review Condition PreC." Depending upon the ACAT level, this activity would generate a potential program review. If the program in question was ACAT I, the condition would be invoked using a triangular distribution between 90 and 120 days, with a most likely value of 105 days. For ACAT II programs, this triangular distribution is between 160 and 200 days, with a most likely value of 180 days. For ACAT III programs, the triangular distribution is between 160 and 200 days, with the most likely value of 200 days. Originally, these distributions were longer, on the order of about every six months to mimic the behavior of the Spring and Fall program reviews. Many of those who helped validate the model took exception to this approach and indicated that whether under a formal review or not, the frequency of these serious funding questions was tied to the ACAT level. The Higher the ACAT level, the more frequent reviews are or with a lower ACAT level, the less frequent the reviews are.

Therefore, the ACAT III programs approach a nearly six month review cycle while the ACAT I programs are more frequent.

A check is made to see if the contract has started yet. If not, the condition is "thrown away" via the model artifact "Dispose of program review prior to need PreC." Otherwise, the program condition meets a decision point called "Program review OK PreC." It has a probability of 95%. A future work modification would make this probability variable, as the number of "unanticipated events" increases, as discussed later, the probability should slowly decrease.

If the result of the program review is "yes", another decision point is reached called "Funds Redirected PreC." This decision point has a probability of 20%. The source of this information is interviews and inference, and later validation. This speaks to the fact that even though a program may be doing well, outside influences may have already decided to make financial changes anyway.

If the outcome of the program review is negative or the outcome of the "funds redirected" point is "yes", then the process is directed to a task called "Prepare Courses of Action," which will be discussed later. A negative outcome from the "funds redirected" step will end the condition with the model artifact "End of Program Review Loop PreC."

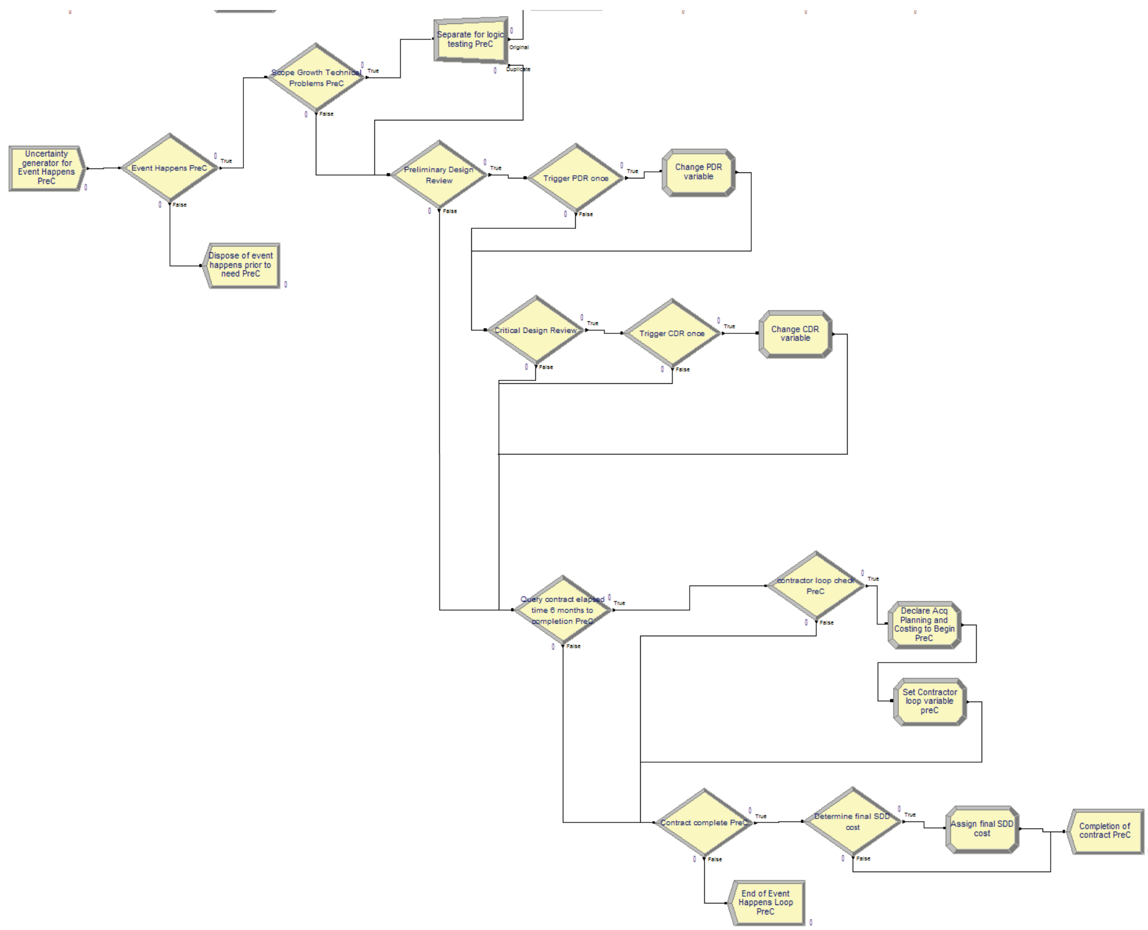

Figure 119: Pre-MS C Contractor swim lane uncertainty generator and contract engine

The contractor portion of the model is significantly less complex than the other portions of the model. However, this part of the model captures an important interaction that can serve as one surrogate for uncertainty. This surrogate is easily recognizable and often mentioned in the literature as "stuff happens". The abstractions in this swim lane will still keep this surrogate viable, but won't cause it to be too complex for understanding. The first task is to generate an uncertainty event. This occurs on a frequency modeled by a triangular distribution with a range between 30 and 90 days, with a most likely value of 60 days. During the validation of the model, acquisition professionals pointed out that the kinds of things that required their attention outside of their normal job descriptions relating to the program in development happened about every two months.

The check point “Event Happens preC” waits for the contract to start. If the contract has not started, the uncertainty event is thrown away, as evidenced by the model artifact “Dispose of event happens prior to need PreC.” If it has started, the event proceeds to the next step, e.g. an “event” has happened. These are the larger issues that arise during the day-to-day performance of the contract. This task serves largely as the surrogate for uncertainty. The source of this information is experience and the assumptions required for this model to work.

A decision point called “Scope Growth Technical Problems PreC” has a probability of 20%. The smaller probability is a trade-off between the short time duration of the previous step and the probability that troubles really do occur over the course of a contract. If “yes”, the flow is split, so that one “event” moves to a process step in the Acquisition Swim Lane, “Prepare Courses of Action,” which will be discussed later. Additionally, the process flows in the direction of another decision point, called “Contract Complete?” The source of this information is experience and is required to make the model work.

First, a check is made to see if the program is ready for the “Preliminary Design Review” or not. It checks to see if 25% of the original contract length has transpired. If so, the model next checks to see that the “Trigger PDR once” has only been done once. If it is the first time, the artifact “Change PDR variable is set accordingly to set other processes in motion and also to prevent other events from going down this particular path. Regardless of the outcome, as long as PDR has started, the next check to make is about the “Critical Design Review.” If 45% of the contract length has transpired, the CDR will be triggered. First, the model checks to see that the CDR is only triggered once. If it is the first time, “Change CDR variable” is changed to reflect the start of the CDR.

The next decision point is to query if the contract length is within 6 months of contract completion. If “yes”, the next step is to query if it is the first time. If “yes”, then this triggers the Acquisition Planning Activity step and the three costing activities. It also sets a flag indicating it has

tripped the contractor loop so subsequent events won't go down this path again and then proceeds to the next step. If the event is met with "no" to either question, the flow proceeds to the next step as well.

The decision point "Contract Complete preC" is a simple logic test to see if the total time elapsed is greater than total of the contract starting time and the contract length. If "no", the event is removed from the model using the artifact, "End of Event Happens Loop PreC." If "yes", a query is made to see if this is the first time the event has arrived at this point. If the query is affirmative, the final variable for the future work extension on the final contract cost, which will be explained later, is set. Then the event is disposed at the "Completion of contract PreC." If the query is false, is it immediately sent also to the artifact "Completion of contract PreC" for disposal.

This particular approach was used to accommodate multiple "events" working their way through the system at any given time and be able to trigger events appropriately.

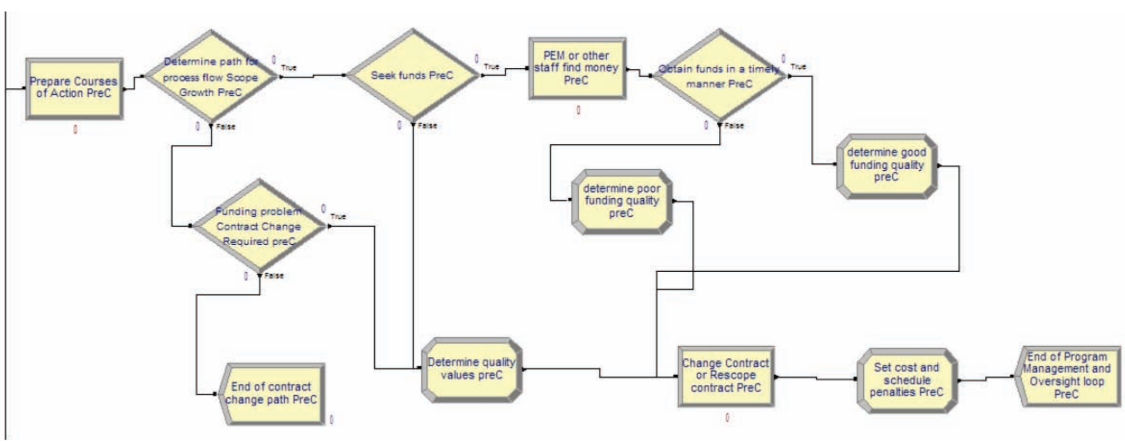

Figure 120: Pre-MS C Acquisition swim lane program management and oversight loop

This particular set of activities drew the most scrutiny during the validation portion of the model development, especially from the acquisition personnel. Many changes were made to the model based upon their feedback.

Whether an "event" or a "program review condition" appears at the step, "Prepare Courses of Action PreC," it is treated the same. The task, "Prepare Courses of Action PreC" has a time distribution

of 5 to 10 days, with a most likely value of 8 days. This gets into the daily activities of the office managing the program and dealing with issues. The source of this information is personal experience, interviews and inference. Acquisition personnel validated the information at this step.

At this point, 80% of the process flow will proceed down the “Scope Growth/Technical problems” path. The other 20% will follow the “Funding Problem” path. The source of this information is from interviews, inference and personal experience. Regardless of the reason, since scope growth and technical issues can also be boiled down to financial impacts, the rest of the diagram deals with financial issues.

A decision point, “Funding problem Contract Change Required PreC” has a probability of 40%. A future work extension to the model to make it more realistic would be to allow this probability to slowly increase depending upon the total number of “events” that have happened. If “false”, the event or program review condition is disposed at the model artifact “End of contract change path.” If “true,” several quality values are set. These quality values will determine the percentage of cost and schedule growth added in a later step.

The decision point named “Seek Funds PreC” has a probability of 30%. This probability is influenced by whether or not the program can deal with the event or problem on its own. The reason for the “problem” may be outside of the acquisition swim lane. If “yes”, a task entitled “PEM or other staff find money PreC” begins. It has a time duration of 14 days to 180 days for ACAT I programs, with a most likely value of 83 days. For ACAT II and ACAT III programs, there is a longer timeline associated with finding funds, having the same distribution, but the most likely value is 160 days. This time duration is influenced by the fact that there are many, many sources of money. These sources can be other programs, results of different “periodic reviews” and other items. Sometimes, the movement of money must rely upon approval from higher levels, up to and including Congress. Additionally, the timing of when the request goes in, e.g. the month of the year compared to the POM cycle and the

overall amount required, affects the ability of the PEM to find the money required, e.g. the more money requested, the longer amount of time is necessary to obtain it. This step was validated by PPBE and acquisition personnel.

As an aside, in the case of budget execution problems, another task is invoked but it is not represented in the model. It is called "Prepare Program budget decision information." This task feeds directly into the budgeting and programming process. It is used in subsequent iterations of the PPBE process. The source of this information is official documentation and inference.

A decision point entitled, "Obtain funds in a timely manner PreC" has a probability of 65%. This probability is influenced by the fact that there are many, many sources of money. These sources can be other programs, results of different "periodic reviews" and other items. Sometimes having the money arrive "late" is just as bad as or worse than not getting the money at all due to the various funding constraints associated with the funds. The source of this information is inference and experience. If true, e.g. moneys are obtained in a timely manner, the impact will be a 4.5% growth in the cost and schedule of the program. If false, e.g. moneys are not obtained in a timely manner, the impact will be a 5.5% growth in the cost and schedule of the program. These penalties will be assessed in a later step.

A process task, "Change contract or re-scope contract PreC" has a time distribution of 15 to 60 days, with a most likely value of 20 days, where the variation is dependent upon the scale of contract change and the complexity of the change. This is associated with the actual time required to process a contract change. The source of this information is experience and inference.

Appendix A provides some insights into the various causes of cost and schedule growth, enumerated through an extensive literature search. In some sense, the randomness of the outcomes is dependent upon where in the system the activity occurs. For purposes of simplicity, an assumption that with every contract change, a 5% schedule and cost penalty should be assessed, is made. This approximation was validated as reasonable by acquisition personnel.

The step “Set cost and schedule penalties PreC” is where an adjustment to the program is made; reflected in terms of cost and schedule[71]. The degree to which both cost and schedule will be changed is dependent upon the quality variables set. Cost and schedule will either experience a 4.5%, a 5%, or a 5.5% growth to their current baseline status. As multiple issues can be working their way through the system at any given time, there is a potential for large cost and schedule growth to occur.

Following this activity, the “event” or “program review condition” is permanently removed from the model through the model artifact of “End of Program Management and Oversight loop PreC.”

Summary

This model represents the first of its kind to methodically document at a high level of abstraction the big “A” of Acquisition – comprised of the three major systems within the AF, e.g. Requirements, PPBE, and Acquisition, – in a manner that is simple to follow and gains transparency into the overall functioning of this system. It does so by combining the “official” process flow with observed realities and validated observations of the probabilities and time required with the different steps.

It is hoped that this model marks the beginning of better understanding into the overall functioning of the big “A” of Acquisition of systems in the US Air Force and other large complex development systems.

[71] Since it has already been noted that schedule is a reasonable surrogate for cost or rather, is closely tied to cost, the model only closely tracks schedule. The “hooks” are there for future work to add cost as an explicit part of the model.

Appendix E – Model Documentation

SIMAN Code

SIMAN view of model

```
;
;
;    Model statements for module:  BasicProcess.Create 1 (Start model)
;

683$        CREATE,       1,DaysToBaseTime(0),Idea:DaysToBaseTime(EXPO(1)),1:NEXT(684$);

684$        ASSIGN:       Start model.NumberOut=Start model.NumberOut + 1:NEXT(657$);



;
;
;    Model statements for module:  BasicProcess.Assign 147 (Assign Beginning simulation time)
;
657$        ASSIGN:       SimTime=TNOW:NEXT(0$);



;
;
;    Model statements for module:  BasicProcess.Process 1 (Random Entry Point)
;
0$          ASSIGN:       Random Entry Point.NumberIn=Random Entry Point.NumberIn + 1:
                    Random Entry Point.WIP=Random Entry Point.WIP+1;
688$        DELAY:        Uniform(1,365),,Other;
735$        ASSIGN:       Random Entry Point.NumberOut=Random Entry Point.NumberOut + 1:
                    Random Entry Point.WIP=Random Entry Point.WIP-1:NEXT(35$);



;
;
;    Model statements for module:  BasicProcess.Process 17 (Set ACAT level)
;
35$         ASSIGN:       Set ACAT level.NumberIn=Set ACAT level.NumberIn + 1:
                    Set ACAT level.WIP=Set ACAT level.WIP+1:NEXT(36$);

36$         BRANCH,       1:
```

```
                    With,(62)/100,37$,Yes:
                    With,(14)/100,38$,Yes:
                    With,(5)/100,39$,Yes:
                    With,(9)/100,41$,Yes:
                    With,(8)/100,42$,Yes:
                    Else,40$,Yes;
40$       ASSIGN:      ACAT Level=1:NEXT(786$);

37$       ASSIGN:      ACAT Level=3:NEXT(786$);

38$       ASSIGN:      ACAT Level=2:NEXT(786$);

39$       ASSIGN:      ACAT Level=1:NEXT(786$);

41$       ASSIGN:      ACAT Level=1:NEXT(786$);

42$       ASSIGN:      ACAT Level=1:NEXT(786$);

786$      ASSIGN:      Set ACAT level.NumberOut=Set ACAT level.NumberOut + 1:
                    Set ACAT level.WIP=Set ACAT level.WIP-1:NEXT(1$);


;
;
;    Model statements for module:  BasicProcess.Decide 1 (For existing Program?)
;
1$        BRANCH,      1:
                    With,(75)/100,791$,Yes:
                    Else,792$,Yes;
791$      ASSIGN:      For existing Program?.NumberOut True=For existing Program?.NumberOut True
+ 1:NEXT(2$);

792$      ASSIGN:      For existing Program?.NumberOut False=For existing Program?.NumberOut False
+ 1:NEXT(16$);


;
;
;    Model statements for module:  BasicProcess.Process 2 (Route to Proper Organization)
;
2$        ASSIGN:      Route to Proper Organization.NumberIn=Route to Proper Organization.NumberIn
+ 1:
```

```
                Route to Proper Organization.WIP=Route to Proper Organization.WIP+1;
794$      DELAY:      Triangular(3,3,7),,Tran;
841$      ASSIGN:     Route to Proper Organization.NumberOut=Route to Proper
Organization.NumberOut + 1:
                Route to Proper Organization.WIP=Route to Proper Organization.WIP-1:NEXT(3$);


;
;
;     Model statements for module:  BasicProcess.Decide 2 (In Scope of Existing document?)
;
3$        BRANCH,     1:
                With,(85)/100,844$,Yes:
                Else,845$,Yes;
844$      ASSIGN:     In Scope of Existing document?.NumberOut True=In Scope of Existing
document?.NumberOut True + 1
                :NEXT(4$);

845$      ASSIGN:     In Scope of Existing document?.NumberOut False=In Scope of Existing
document?.NumberOut False + 1
                :NEXT(13$);


;
;
;     Model statements for module:  BasicProcess.Process 3 (Prepare for Acquisition)
;
4$        ASSIGN:     Prepare for Acquisition.NumberIn=Prepare for Acquisition.NumberIn + 1:
                Prepare for Acquisition.WIP=Prepare for Acquisition.WIP+1;
847$      DELAY:      Triangular(5,7,1460),,VA;
894$      ASSIGN:     Prepare for Acquisition.NumberOut=Prepare for Acquisition.NumberOut + 1:
                Prepare for Acquisition.WIP=Prepare for Acquisition.WIP-1:NEXT(5$);


;
;
;     Model statements for module:  BasicProcess.Decide 3 (Rejection outright)
;
5$        BRANCH,     1:
                With,(55)/100,897$,Yes:
                Else,898$,Yes;
```

```
897$        ASSIGN:      Rejection outright.NumberOut True=Rejection outright.NumberOut True +
1:NEXT(354$);

898$        ASSIGN:      Rejection outright.NumberOut False=Rejection outright.NumberOut False +
1:NEXT(6$);


;
;
;    Model statements for module:  BasicProcess.Assign 56 (End simulation 1)
;
354$        ASSIGN:      Early Archive=TNOW:
                  TFIN=TNOW:NEXT(656$);


;
;
;    Model statements for module:  BasicProcess.Record 1 (Record 1)
;
656$        TALLY:       Record 1,INT(SimTime),1:NEXT(15$);


;
;
;    Model statements for module:  BasicProcess.Dispose 3 (Early Archive End)
;
15$         ASSIGN:      Early Archive End.NumberOut=Early Archive End.NumberOut + 1;
899$        DISPOSE:     No;


;
;
;    Model statements for module:  BasicProcess.Decide 4 (OR junction)
;
6$          BRANCH,      1:
                  With,(75)/100,900$,Yes:
                  Else,901$,Yes;
900$        ASSIGN:      OR junction.NumberOut True=OR junction.NumberOut True + 1:NEXT(7$);

901$        ASSIGN:      OR junction.NumberOut False=OR junction.NumberOut False + 1:NEXT(8$);
```

```
;
;
;     Model statements for module:  BasicProcess.Process 4 (to Acquisition Modernization or Sustainment
Activity)
;
7$          ASSIGN:      to Acquisition Modernization or Sustainment Activity.NumberIn=
                         to Acquisition Modernization or Sustainment Activity.NumberIn + 1:
                         to Acquisition Modernization or Sustainment Activity.WIP=
                         to Acquisition Modernization or Sustainment Activity.WIP+1;
903$        DELAY:       Triangular(180,903,1460),,VA;
950$        ASSIGN:      to Acquisition Modernization or Sustainment Activity.NumberOut=
                         to Acquisition Modernization or Sustainment Activity.NumberOut + 1:
                         to Acquisition Modernization or Sustainment Activity.WIP=
                         to Acquisition Modernization or Sustainment Activity.WIP-1:NEXT(10$);


;
;
;     Model statements for module:  BasicProcess.Decide 6 (MDAP Threshold crossed?)
;
10$         BRANCH,      1:
                         With,(10)/100,953$,Yes:
                         Else,954$,Yes;
953$        ASSIGN:      MDAP Threshold crossed?.NumberOut True=MDAP Threshold
crossed?.NumberOut True + 1:NEXT(11$);

954$        ASSIGN:      MDAP Threshold crossed?.NumberOut False=MDAP Threshold
crossed?.NumberOut False + 1:NEXT(355$);


;
;
;     Model statements for module:  BasicProcess.Decide 7 (Which Milestone after MDAP threshold?)
;
11$         BRANCH,      1:
                         With,(24)/100,678$,Yes:
                         With,(75)/100,679$,Yes:
                         Else,677$,Yes;


;
;
;     Model statements for module:  BasicProcess.Record 36 (Record 36)
```

```
;
677$        TALLY:       Record 36,INT(SimTime),1:NEXT(636$);


;
;
;    Model statements for module:  BasicProcess.Assign 132 (Reinsert into Acquisition Process A)
;
636$        ASSIGN:       Back into process at A time=TNOW:
                    Back into process at PreA=1:NEXT(120$);


;
;
;    Model statements for module:  BasicProcess.Decide 48 (Check for ACAT level for potential AoA)
;
120$        BRANCH,       1:
                    If,ACAT Level==1,957$,Yes:
                    Else,958$,Yes;
957$        ASSIGN:       Check for ACAT level for potential AoA.NumberOut True=
                    Check for ACAT level for potential AoA.NumberOut True + 1:NEXT(149$);

958$        ASSIGN:       Check for ACAT level for potential AoA.NumberOut False=
                    Check for ACAT level for potential AoA.NumberOut False + 1:NEXT(123$);


;
;
;    Model statements for module:  BasicProcess.Process 71 (Develop AoA Plan ACAT I)
;
149$        ASSIGN:       Develop AoA Plan ACAT I.NumberIn=Develop AoA Plan ACAT I.NumberIn + 1:
                    Develop AoA Plan ACAT I.WIP=Develop AoA Plan ACAT I.WIP+1;
960$        DELAY:       Triangular(60,75,90),,VA;
1007$        ASSIGN:       Develop AoA Plan ACAT I.NumberOut=Develop AoA Plan ACAT I.NumberOut + 1:
                    Develop AoA Plan ACAT I.WIP=Develop AoA Plan ACAT I.WIP-1:NEXT(121$);


;
;
;    Model statements for module:  BasicProcess.Decide 49 (ACAT 1 funding)
;
121$        BRANCH,       1:
```

```
                    With,(70)/100,1010$,Yes:
                    Else,1011$,Yes;
1010$       ASSIGN:       ACAT 1 funding.NumberOut True=ACAT 1 funding.NumberOut True +
1:NEXT(141$);

1011$       ASSIGN:       ACAT 1 funding.NumberOut False=ACAT 1 funding.NumberOut False +
1:NEXT(122$);



;
;
;     Model statements for module:  BasicProcess.Decide 57 (ACAT level check for Acquisition swimlane
preA)
;
141$        BRANCH,       1:
                    If,ACAT Level==1,1012$,Yes:
                    Else,1013$,Yes;
1012$       ASSIGN:       ACAT level check for Acquisition swimlane preA.NumberOut True=
                    ACAT level check for Acquisition swimlane preA.NumberOut True + 1:NEXT(142$);

1013$       ASSIGN:       ACAT level check for Acquisition swimlane preA.NumberOut False=
                    ACAT level check for Acquisition swimlane preA.NumberOut False + 1:NEXT(143$);



;
;
;     Model statements for module:  BasicProcess.Process 68 (ACAT I prepare for Acquisition panels)
;
142$        ASSIGN:       ACAT I prepare for Acquisition panels.NumberIn=ACAT I prepare for Acquisition
panels.NumberIn + 1:
                    ACAT I prepare for Acquisition panels.WIP=ACAT I prepare for Acquisition panels.WIP+1;
1015$       DELAY:        Triangular(40,55,60),,VA;
1062$       ASSIGN:       ACAT I prepare for Acquisition panels.NumberOut=ACAT I prepare for
Acquisition panels.NumberOut + 1:
                    ACAT I prepare for Acquisition panels.WIP=ACAT I prepare for Acquisition panels.WIP-
1:NEXT(144$);



;
;
;     Model statements for module:  BasicProcess.Process 70 (Acquisition panels preA)
;
```

```
144$        ASSIGN:       Acquisition panels preA.NumberIn=Acquisition panels preA.NumberIn + 1:
                    Acquisition panels preA.WIP=Acquisition panels preA.WIP+1;
1066$       DELAY:        Triangular(15,30,35),,VA;
1113$       ASSIGN:       Acquisition panels preA.NumberOut=Acquisition panels preA.NumberOut + 1:
                    Acquisition panels preA.WIP=Acquisition panels preA.WIP-1:NEXT(145$);


;
;
;     Model statements for module:  BasicProcess.Decide 58 (Concept Decision and ADM)
;
145$        BRANCH,       1:
                    With,(99)/100,1116$,Yes:
                    Else,1117$,Yes;
1116$       ASSIGN:       Concept Decision and ADM.NumberOut True=Concept Decision and
ADM.NumberOut True + 1:NEXT(125$);

1117$       ASSIGN:       Concept Decision and ADM.NumberOut False=Concept Decision and
ADM.NumberOut False + 1:NEXT(146$);


;
;
;     Model statements for module:  BasicProcess.Decide 52 (Check for AoA)
;
125$        BRANCH,       1:
                    If,ACAT Level==1,140$,Yes:
                    If,AoA flag==1,126$,Yes:
                    Else,655$,Yes;


;
;
;     Model statements for module:  BasicProcess.Separate 28 (Non AoA Route)
;
655$        DUPLICATE,    100 - 0:
                    1,1122$,0:NEXT(1121$);

1121$       ASSIGN:       Non AoA Route.NumberOut Orig=Non AoA Route.NumberOut Orig +
1:NEXT(130$);

1122$       ASSIGN:       Non AoA Route.NumberOut Dup=Non AoA Route.NumberOut Dup +
1:NEXT(153$);
```

```
;
;
;    Model statements for module:  BasicProcess.Process 62 (Analysis)
;
130$        ASSIGN:      Analysis.NumberIn=Analysis.NumberIn + 1:
                    Analysis.WIP=Analysis.WIP+1;
1124$       DELAY:       Triangular(2,7,180),,VA;
1171$       ASSIGN:      Analysis.NumberOut=Analysis.NumberOut + 1:
                    Analysis.WIP=Analysis.WIP-1:NEXT(150$);


;
;
;    Model statements for module:  BasicProcess.Batch 2 (Wait until both complete preA)
;
150$        QUEUE,       Wait until both complete preA.Queue;
1174$       GROUP,       ,Permanent:2,Last:NEXT(1175$);

1175$       ASSIGN:      Wait until both complete preA.NumberOut=Wait until both complete
preA.NumberOut + 1:NEXT(132$);


;
;
;    Model statements for module:  BasicProcess.Process 64 (Choose and recommend a selected CoA)
;
132$        ASSIGN:      Choose and recommend a selected CoA.NumberIn=Choose and recommend a
selected CoA.NumberIn + 1:
                    Choose and recommend a selected CoA.WIP=Choose and recommend a selected
CoA.WIP+1;
1177$       DELAY:       Triangular(30,60,90),,VA;
1224$       ASSIGN:      Choose and recommend a selected CoA.NumberOut=Choose and recommend a
selected CoA.NumberOut + 1:
                    Choose and recommend a selected CoA.WIP=Choose and recommend a selected
CoA.WIP-1:NEXT(133$);


;
;
;    Model statements for module:  BasicProcess.Decide 54 (Approve Selected CoA)
```

```
;
133$        BRANCH,      1:
                     With,(99)/100,1227$,Yes:
                     Else,1228$,Yes;
1227$       ASSIGN:      Approve Selected CoA.NumberOut True=Approve Selected CoA.NumberOut
True + 1:NEXT(156$);

1228$       ASSIGN:      Approve Selected CoA.NumberOut False=Approve Selected CoA.NumberOut
False + 1:NEXT(134$);


;
;
;    Model statements for module:  BasicProcess.Batch 3 (Processes come together)
;
156$        QUEUE,       Processes come together.Queue;
1229$       GROUP,       ,Permanent:2,Last:NEXT(1230$);

1230$       ASSIGN:      Processes come together.NumberOut=Processes come together.NumberOut +
1:NEXT(155$);


;
;
;    Model statements for module:  BasicProcess.Assign 20 (Preferred System Concept Named)
;
155$        ASSIGN:      Preferred System Concept=TNOW:NEXT(157$);


;
;
;    Model statements for module:  BasicProcess.Process 73 (Draft RFP Preparation preA)
;
157$        ASSIGN:      Draft RFP Preparation preA.NumberIn=Draft RFP Preparation preA.NumberIn + 1:
                     Draft RFP Preparation preA.WIP=Draft RFP Preparation preA.WIP+1;
1232$       DELAY:       Triangular(10,17,20),,VA;
1279$       ASSIGN:      Draft RFP Preparation preA.NumberOut=Draft RFP Preparation preA.NumberOut
+ 1:
                     Draft RFP Preparation preA.WIP=Draft RFP Preparation preA.WIP-1:NEXT(158$);


;
```

```
;
;     Model statements for module:  BasicProcess.Separate 4 (Separate activities once preA)
;
158$          DUPLICATE,     100 - 0:
                        1,1284$,0:NEXT(1283$);

1283$        ASSIGN:       Separate activities once preA.NumberOut Orig=Separate activities once
preA.NumberOut Orig + 1
                        :NEXT(160$);

1284$        ASSIGN:       Separate activities once preA.NumberOut Dup=Separate activities once
preA.NumberOut Dup + 1
                        :NEXT(159$);



;
;
;     Model statements for module:  BasicProcess.Process 74 (RFP Coordination Process)
;
160$          ASSIGN:       RFP Coordination Process.NumberIn=RFP Coordination Process.NumberIn + 1:
                        RFP Coordination Process.WIP=RFP Coordination Process.WIP+1;
1286$        DELAY:        Triangular(25,45,50),,VA;
1333$        ASSIGN:       RFP Coordination Process.NumberOut=RFP Coordination Process.NumberOut +
1:
                        RFP Coordination Process.WIP=RFP Coordination Process.WIP-1:NEXT(165$);



;
;
;     Model statements for module:  BasicProcess.Batch 4 (Complete predecessor activities preA)
;
165$          QUEUE,        Complete predecessor activities preA.Queue;
1336$        GROUP,        ,Permanent:3,Last:NEXT(1337$);

1337$        ASSIGN:       Complete predecessor activities preA.NumberOut=Complete predecessor
activities preA.NumberOut + 1
                        :NEXT(166$);



;
;
;     Model statements for module:  BasicProcess.Process 78 (Acquisition Panels)
```

```
;
166$      ASSIGN:     Acquisition Panels.NumberIn=Acquisition Panels.NumberIn + 1:
                  Acquisition Panels.WIP=Acquisition Panels.WIP+1;
1339$     DELAY:      Triangular(15,30,35),,VA;
1386$     ASSIGN:     Acquisition Panels.NumberOut=Acquisition Panels.NumberOut + 1:
                  Acquisition Panels.WIP=Acquisition Panels.WIP-1:NEXT(167$);


;
;
;   Model statements for module:  BasicProcess.Decide 61 (MDA Milestone approval)
;
167$      BRANCH,     1:
                  With,(99)/100,1389$,Yes:
                  Else,1390$,Yes;
1389$     ASSIGN:     MDA Milestone approval.NumberOut True=MDA Milestone
approval.NumberOut True + 1:NEXT(171$);

1390$     ASSIGN:     MDA Milestone approval.NumberOut False=MDA Milestone
approval.NumberOut False + 1:NEXT(168$);


;
;
;   Model statements for module:  BasicProcess.Assign 22 (MS A decision)
;
171$      ASSIGN:     MS A decision time=TNOW:NEXT(173$);


;
;
;   Model statements for module:  BasicProcess.Separate 6 (Split flow for PreMSB)
;
173$      DUPLICATE,   100 - 0:
                  1,1393$,0:NEXT(1392$);

1392$     ASSIGN:     Split flow for PreMSB.NumberOut Orig=Split flow for PreMSB.NumberOut Orig +
1:NEXT(295$);

1393$     ASSIGN:     Split flow for PreMSB.NumberOut Dup=Split flow for PreMSB.NumberOut Dup +
1:NEXT(284$);
```

```
;
;
;    Model statements for module:  AdvancedProcess.Hold 1 (Wait for Signal from Acquisition)
;
295$         SCAN:         contract start==1:NEXT(172$);


;
;
;    Model statements for module:  BasicProcess.Process 79 (KPP Development)
;
172$         ASSIGN:       KPP Development.NumberIn=KPP Development.NumberIn + 1:
                       KPP Development.WIP=KPP Development.WIP+1;
1395$        DELAY:
                       TRIA(0.65*TD original contract length, .72*TD original contract length, 0.75*TD original
contract length),,
                       VA;
1442$        ASSIGN:       KPP Development.NumberOut=KPP Development.NumberOut + 1:
                       KPP Development.WIP=KPP Development.WIP-1:NEXT(652$);


;
;
;    Model statements for module:  BasicProcess.Assign 146 (Assign KPP Development complete PreB)
;
652$         ASSIGN:       KPP Development signal PreB=1:NEXT(174$);


;
;
;    Model statements for module:  BasicProcess.Decide 64 (Decision to pursue requirements PreB)
;
174$         BRANCH,       1:
                       With,(98)/100,1445$,Yes:
                       Else,1446$,Yes;
1445$        ASSIGN:       Decision to pursue requirements PreB.NumberOut True=
                       Decision to pursue requirements PreB.NumberOut True + 1:NEXT(179$);

1446$        ASSIGN:       Decision to pursue requirements PreB.NumberOut False=
                       Decision to pursue requirements PreB.NumberOut False + 1:NEXT(175$);
```

```
;
;
;    Model statements for module:  BasicProcess.Process 82 (Draft briefing and materials PreB)
;
179$        ASSIGN:       Draft briefing and materials PreB.NumberIn=Draft briefing and materials
PreB.NumberIn + 1:
                    Draft briefing and materials PreB.WIP=Draft briefing and materials PreB.WIP+1;
1448$       DELAY:        Triangular(10,31,40),,VA;
1495$       ASSIGN:       Draft briefing and materials PreB.NumberOut=Draft briefing and materials
PreB.NumberOut + 1:
                    Draft briefing and materials PreB.WIP=Draft briefing and materials PreB.WIP-
1:NEXT(180$);


;
;
;    Model statements for module:  BasicProcess.Decide 66 (MAJCOM A Letters Coordinate and Concur
PreB)
;
180$        BRANCH,       1:
                    With,(90)/100,1498$,Yes:
                    Else,1499$,Yes;
1498$       ASSIGN:       MAJCOM A Letters Coordinate and Concur PreB.NumberOut True=
                    MAJCOM A Letters Coordinate and Concur PreB.NumberOut True + 1:NEXT(181$);

1499$       ASSIGN:       MAJCOM A Letters Coordinate and Concur PreB.NumberOut False=
                    MAJCOM A Letters Coordinate and Concur PreB.NumberOut False + 1:NEXT(187$);


;
;
;    Model statements for module:  BasicProcess.Process 87 (Update and Schedule Calendar PreB)
;
181$        ASSIGN:       Update and Schedule Calendar PreB.NumberIn=Update and Schedule Calendar
PreB.NumberIn + 1:
                    Update and Schedule Calendar PreB.WIP=Update and Schedule Calendar PreB.WIP+1;
1501$       DELAY:        Triangular(3,12,15),,NVA;
1548$       ASSIGN:       Update and Schedule Calendar PreB.NumberOut=Update and Schedule Calendar
PreB.NumberOut + 1:
                    Update and Schedule Calendar PreB.WIP=Update and Schedule Calendar PreB.WIP-
1:NEXT(182$);
```

```
;
;
;     Model statements for module:  BasicProcess.Decide 69 (PreRSR MAJCOM A8 PreB)
;
182$          BRANCH,        1:
                    With,(99)/100,1551$,Yes:
                    Else,1552$,Yes;
1551$         ASSIGN:        PreRSR MAJCOM A8 PreB.NumberOut True=PreRSR MAJCOM A8
PreB.NumberOut True + 1:NEXT(183$);

1552$         ASSIGN:        PreRSR MAJCOM A8 PreB.NumberOut False=PreRSR MAJCOM A8
PreB.NumberOut False + 1:NEXT(187$);



;
;
;     Model statements for module:  BasicProcess.Process 88 (Finalize RSR and calendar items PreB)
;
183$          ASSIGN:        Finalize RSR and calendar items PreB.NumberIn=Finalize RSR and calendar items
PreB.NumberIn + 1:
                    Finalize RSR and calendar items PreB.WIP=Finalize RSR and calendar items PreB.WIP+1;
1554$         DELAY:         Triangular(21,28,35),,NVA;
1601$         ASSIGN:        Finalize RSR and calendar items PreB.NumberOut=Finalize RSR and calendar
items PreB.NumberOut + 1:
                    Finalize RSR and calendar items PreB.WIP=Finalize RSR and calendar items PreB.WIP-
1:NEXT(184$);



;
;
;     Model statements for module:  BasicProcess.Decide 70 (RSR HQ USAF A5R PreB)
;
184$          BRANCH,        1:
                    With,(98)/100,1604$,Yes:
                    Else,1605$,Yes;
1604$         ASSIGN:        RSR HQ USAF A5R PreB.NumberOut True=RSR HQ USAF A5R PreB.NumberOut
True + 1:NEXT(338$);

1605$         ASSIGN:        RSR HQ USAF A5R PreB.NumberOut False=RSR HQ USAF A5R PreB.NumberOut
False + 1:NEXT(187$);
```

```
;
;
;    Model statements for module:  AdvancedProcess.Hold 2 (Wait for EOA completion)
;
338$        QUEUE,       Wait for EOA completion.Queue;
            SCAN:        EOA Success==1:NEXT(189$);


;
;
;    Model statements for module:  BasicProcess.Process 90 (Form High Performance Team PreB)
;
189$        ASSIGN:      Form High Performance Team PreB.NumberIn=Form High Performance Team
PreB.NumberIn + 1:
                         Form High Performance Team PreB.WIP=Form High Performance Team PreB.WIP+1;
1607$       DELAY:       Triangular(30,41,45),,Wait;
1654$       ASSIGN:      Form High Performance Team PreB.NumberOut=Form High Performance Team
PreB.NumberOut + 1:
                         Form High Performance Team PreB.WIP=Form High Performance Team PreB.WIP-
1:NEXT(190$);


;
;
;    Model statements for module:  BasicProcess.Process 91 (High Performance Team work preB)
;
190$        ASSIGN:      High Performance Team work preB.NumberIn=High Performance Team work
preB.NumberIn + 1:
                         High Performance Team work preB.WIP=High Performance Team work preB.WIP+1;
1658$       DELAY:       Triangular(5,6,7),,VA;
1705$       ASSIGN:      High Performance Team work preB.NumberOut=High Performance Team work
preB.NumberOut + 1:
                         High Performance Team work preB.WIP=High Performance Team work preB.WIP-
1:NEXT(380$);


;
;
;    Model statements for module:  BasicProcess.Assign 76 (Declare KPPs ready for Acquisition PreB)
;
```

```
380$        ASSIGN:       KPPs Ready PreB=1:NEXT(191$);


;
;
;    Model statements for module:  BasicProcess.Decide 74 (Determine document approval path preB)
;
191$        BRANCH,       1:
                 If,ACAT Level==3,248$,Yes:
                 If,ACAT Level==2,222$,Yes:
                 Else,192$,Yes;


;
;
;    Model statements for module:  BasicProcess.Process 92 (Joint Interest preB)
;
192$        ASSIGN:       Joint Interest preB.NumberIn=Joint Interest preB.NumberIn + 1:
                 Joint Interest preB.WIP=Joint Interest preB.WIP+1:NEXT(193$);

193$        ASSIGN:       draft document preB joint interest.NumberIn=draft document preB joint
interest.NumberIn + 1:
                 draft document preB joint interest.WIP=draft document preB joint interest.WIP+1;
1762$       DELAY:        Triangular(30,55,60),,VA;
1809$       ASSIGN:       draft document preB joint interest.NumberOut=draft document preB joint
interest.NumberOut + 1:
                 draft document preB joint interest.WIP=draft document preB joint interest.WIP-
1:NEXT(194$);

194$        ASSIGN:       Air Staff processes joint int preB.NumberIn=Air Staff processes joint int
preB.NumberIn + 1:
                 Air Staff processes joint int preB.WIP=Air Staff processes joint int preB.WIP+1;
1813$       DELAY:        Triangular(21,25,42),,VA;
1860$       ASSIGN:       Air Staff processes joint int preB.NumberOut=Air Staff processes joint int
preB.NumberOut + 1:
                 Air Staff processes joint int preB.WIP=Air Staff processes joint int preB.WIP-
1:NEXT(195$);

195$        BRANCH,       1:
                 With,(95)/100,1863$,Yes:
                 Else,1864$,Yes;
1863$       ASSIGN:       Critical Comments? joint int preB.NumberOut True=
                 Critical Comments? joint int preB.NumberOut True + 1:NEXT(196$);
```

1864$ ASSIGN: Critical Comments? joint int preB.NumberOut False=
Critical Comments? joint int preB.NumberOut False + 1:NEXT(199$);

196$ ASSIGN: Comment Resolution joint int preB.NumberIn=Comment Resolution joint int preB.NumberIn + 1:
Comment Resolution joint int preB.WIP=Comment Resolution joint int preB.WIP+1;
1866$ DELAY: Triangular(15,30,45),,VA;
1913$ ASSIGN: Comment Resolution joint int preB.NumberOut=Comment Resolution joint int preB.NumberOut + 1:
Comment Resolution joint int preB.WIP=Comment Resolution joint int preB.WIP-1:NEXT(197$);

197$ BRANCH, 1:
With,(99)/100,1916$,Yes:
Else,1917$,Yes;
1916$ ASSIGN: MAJCOM Approval? joint int preB.NumberOut True=MAJCOM Approval? joint int preB.NumberOut True + 1
:NEXT(199$);

1917$ ASSIGN: MAJCOM Approval? joint int preB.NumberOut False=MAJCOM Approval? joint int preB.NumberOut False + 1
:NEXT(198$);

199$ ASSIGN: AFROC Preparations joint int preB.NumberIn=AFROC Preparations joint int preB.NumberIn + 1:
AFROC Preparations joint int preB.WIP=AFROC Preparations joint int preB.WIP+1;
1919$ DELAY: Triangular(30,45,60),,VA;
1966$ ASSIGN: AFROC Preparations joint int preB.NumberOut=AFROC Preparations joint int preB.NumberOut + 1:
AFROC Preparations joint int preB.WIP=AFROC Preparations joint int preB.WIP-1:NEXT(200$);

200$ BRANCH, 1:
With,(90)/100,1969$,Yes:
Else,1970$,Yes;
1969$ ASSIGN: AFROC Decision joint int preB.NumberOut True=AFROC Decision joint int preB.NumberOut True + 1
:NEXT(201$);

1970$ ASSIGN: AFROC Decision joint int preB.NumberOut False=AFROC Decision joint int preB.NumberOut False + 1

```
                    :NEXT(205$);

201$        BRANCH,       1:
                    With,(25)/100,1971$,Yes:
                    Else,1972$,Yes;
1971$       ASSIGN:       Post AFROC actions joint int preB.NumberOut True=
                    Post AFROC actions joint int preB.NumberOut True + 1:NEXT(206$);

1972$       ASSIGN:       Post AFROC actions joint int preB.NumberOut False=
                    Post AFROC actions joint int preB.NumberOut False + 1:NEXT(207$);

206$        ASSIGN:       Post AFROC actions PreB.NumberIn=Post AFROC actions PreB.NumberIn + 1:
                    Post AFROC actions PreB.WIP=Post AFROC actions PreB.WIP+1;
1974$       DELAY:        Triangular(1,11,15),,VA;
2021$       ASSIGN:       Post AFROC actions PreB.NumberOut=Post AFROC actions PreB.NumberOut + 1:
                    Post AFROC actions PreB.WIP=Post AFROC actions PreB.WIP-1:NEXT(207$);

207$        BRANCH,       1:
                    With,(50)/100,2024$,Yes:
                    Else,2025$,Yes;
2024$       ASSIGN:       Document Review Phase PreB.NumberOut True=Document Review Phase
PreB.NumberOut True + 1:NEXT(208$);

2025$       ASSIGN:       Document Review Phase PreB.NumberOut False=Document Review Phase
PreB.NumberOut False + 1
                    :NEXT(212$);

208$        ASSIGN:       Document Reveiw Phase 2 Flag Level PreB.NumberIn=
                    Document Reveiw Phase 2 Flag Level PreB.NumberIn + 1:
                    Document Reveiw Phase 2 Flag Level PreB.WIP=Document Reveiw Phase 2 Flag Level
PreB.WIP+1;
2027$       DELAY:        Triangular(21,38,42),,VA;
2074$       ASSIGN:       Document Reveiw Phase 2 Flag Level PreB.NumberOut=
                    Document Reveiw Phase 2 Flag Level PreB.NumberOut + 1:
                    Document Reveiw Phase 2 Flag Level PreB.WIP=Document Reveiw Phase 2 Flag Level
PreB.WIP-1
                    :NEXT(209$);

209$        ASSIGN:       Resolving Flag level comments PreB.NumberIn=Resolving Flag level comments
PreB.NumberIn + 1:
                    Resolving Flag level comments PreB.WIP=Resolving Flag level comments PreB.WIP+1;
2078$       DELAY:        Triangular(15,27,30),,VA;
```

```
2125$      ASSIGN:     Resolving Flag level comments PreB.NumberOut=Resolving Flag level comments
PreB.NumberOut + 1:
                   Resolving Flag level comments PreB.WIP=Resolving Flag level comments PreB.WIP-
1:NEXT(210$);

210$       BRANCH,     1:
                   With,(99)/100,2128$,Yes:
                   Else,2129$,Yes;
2128$      ASSIGN:     MAJCOM approval PreB.NumberOut True=MAJCOM approval PreB.NumberOut
True + 1:NEXT(212$);

2129$      ASSIGN:     MAJCOM approval PreB.NumberOut False=MAJCOM approval PreB.NumberOut
False + 1:NEXT(211$);

212$       ASSIGN:     Functional Capabilities Board PreB.NumberIn=Functional Capabilities Board
PreB.NumberIn + 1:
                   Functional Capabilities Board PreB.WIP=Functional Capabilities Board PreB.WIP+1;
2131$      DELAY:      Triangular(7,14,21),,VA;
2178$      ASSIGN:     Functional Capabilities Board PreB.NumberOut=Functional Capabilities Board
PreB.NumberOut + 1:
                   Functional Capabilities Board PreB.WIP=Functional Capabilities Board PreB.WIP-
1:NEXT(213$);

213$       ASSIGN:     Joint Capabilities Board PreB.NumberIn=Joint Capabilities Board PreB.NumberIn
+ 1:
                   Joint Capabilities Board PreB.WIP=Joint Capabilities Board PreB.WIP+1;
2182$      DELAY:      Triangular(7,14,21),,VA;
2229$      ASSIGN:     Joint Capabilities Board PreB.NumberOut=Joint Capabilities Board
PreB.NumberOut + 1:
                   Joint Capabilities Board PreB.WIP=Joint Capabilities Board PreB.WIP-1:NEXT(214$);

214$       BRANCH,     1:
                   With,(15)/100,2232$,Yes:
                   Else,2233$,Yes;
2232$      ASSIGN:     JCB issues PreB.NumberOut True=JCB issues PreB.NumberOut True +
1:NEXT(215$);

2233$      ASSIGN:     JCB issues PreB.NumberOut False=JCB issues PreB.NumberOut False +
1:NEXT(216$);

215$       ASSIGN:     Resolve JCB issues PreB.NumberIn=Resolve JCB issues PreB.NumberIn + 1:
                   Resolve JCB issues PreB.WIP=Resolve JCB issues PreB.WIP+1;
```

```
2235$     DELAY:     Triangular(10,15,20),,VA;
2282$     ASSIGN:    Resolve JCB issues PreB.NumberOut=Resolve JCB issues PreB.NumberOut + 1:
                 Resolve JCB issues PreB.WIP=Resolve JCB issues PreB.WIP-1:NEXT(216$);

216$      ASSIGN:    JROC preparations PreB.NumberIn=JROC preparations PreB.NumberIn + 1:
                 JROC preparations PreB.WIP=JROC preparations PreB.WIP+1;
2286$     DELAY:     Triangular(14,25,30),,VA;
2333$     ASSIGN:    JROC preparations PreB.NumberOut=JROC preparations PreB.NumberOut + 1:
                 JROC preparations PreB.WIP=JROC preparations PreB.WIP-1:NEXT(217$);

217$      BRANCH,    1:
                 With,(98)/100,2336$,Yes:
                 Else,2337$,Yes;
2336$     ASSIGN:    JROC PreB.NumberOut True=JROC PreB.NumberOut True + 1:NEXT(1758$);

2337$     ASSIGN:    JROC PreB.NumberOut False=JROC PreB.NumberOut False + 1:NEXT(218$);

218$      ASSIGN:    Resolve JROC issues PreB.NumberIn=Resolve JROC issues PreB.NumberIn + 1:
                 Resolve JROC issues PreB.WIP=Resolve JROC issues PreB.WIP+1;
2339$     DELAY:     Triangular(42,51,60),,VA;
2386$     ASSIGN:    Resolve JROC issues PreB.NumberOut=Resolve JROC issues PreB.NumberOut + 1:
                 Resolve JROC issues PreB.WIP=Resolve JROC issues PreB.WIP-1:NEXT(1758$);

211$      ASSIGN:    Hold for a year later in process PreB.NumberIn=Hold for a year later in process
PreB.NumberIn + 1:
                 Hold for a year later in process PreB.WIP=Hold for a year later in process PreB.WIP+1;
2390$     DELAY:     Triangular(270,300,365),,NVA;
2437$     ASSIGN:    Hold for a year later in process PreB.NumberOut=Hold for a year later in process
PreB.NumberOut + 1:
                 Hold for a year later in process PreB.WIP=Hold for a year later in process PreB.WIP-
1:NEXT(212$);

205$      BRANCH,    1:
                 If,AFROC Count==1,2440$,Yes:
                 Else,2441$,Yes;
2440$     ASSIGN:    Check for previous path joint int preB.NumberOut True=
                 Check for previous path joint int preB.NumberOut True + 1:NEXT(219$);

2441$     ASSIGN:    Check for previous path joint int preB.NumberOut False=
                 Check for previous path joint int preB.NumberOut False + 1:NEXT(204$);

219$      ASSIGN:    Kill time at AFROC joint interest preB=TNOW:
```

```
                    TFIN=TNOW:NEXT(220$);

220$        TALLY:       Record 21,INT(SimTime),1:NEXT(203$);

203$        ASSIGN:      Death at AFROC joint int preB.NumberOut=Death at AFROC joint int
preB.NumberOut + 1;
2442$       DISPOSE:     Yes;

204$        ASSIGN:      AFROC Count PreB=1:NEXT(202$);

202$        BRANCH,      1:
                    With,(99)/100,2443$,Yes:
                    Else,2444$,Yes;
2443$       ASSIGN:      Dead activity joint int preB.NumberOut True=Dead activity joint int
preB.NumberOut True + 1
                    :NEXT(219$);

2444$       ASSIGN:      Dead activity joint int preB.NumberOut False=Dead activity joint int
preB.NumberOut False + 1
                    :NEXT(196$);

198$        ASSIGN:      Hold for a year PreB.NumberIn=Hold for a year PreB.NumberIn + 1:
                    Hold for a year PreB.WIP=Hold for a year PreB.WIP+1;
2446$       DELAY:       Triangular(270,300,365),,NVA;
2493$       ASSIGN:      Hold for a year PreB.NumberOut=Hold for a year PreB.NumberOut + 1:
                    Hold for a year PreB.WIP=Hold for a year PreB.WIP-1:NEXT(199$);

1758$       ASSIGN:      Joint Interest preB.NumberOut=Joint Interest preB.NumberOut + 1:
                    Joint Interest preB.WIP=Joint Interest preB.WIP-1:NEXT(221$);



;
;
;    Model statements for module:  BasicProcess.Assign 27 (Record CCD)
;
221$        ASSIGN:      CCD=1:
                    CCD Time=TNOW:NEXT(353$);



;
;
;    Model statements for module:  BasicProcess.Batch 14 (Receipt of approved CCD)
```

```
;
353$        QUEUE,        Receipt of approved CCD.Queue;
2496$       GROUP,        ,Permanent:2,Last:NEXT(2497$);

2497$       ASSIGN:       Receipt of approved CCD.NumberOut=Receipt of approved CCD.NumberOut +
1:NEXT(279$);


;
;
;     Model statements for module:  BasicProcess.Decide 112 (MDA Milestone approval PreB)
;
279$        BRANCH,       1:
                          With,(99)/100,2498$,Yes:
                          Else,2499$,Yes;
2498$       ASSIGN:       MDA Milestone approval PreB.NumberOut True=MDA Milestone approval
PreB.NumberOut True + 1
                          :NEXT(283$);

2499$       ASSIGN:       MDA Milestone approval PreB.NumberOut False=MDA Milestone approval
PreB.NumberOut False + 1
                          :NEXT(280$);


;
;
;     Model statements for module:  BasicProcess.Assign 38 (MS B decision)
;
283$        ASSIGN:       MS B decision time=TNOW:NEXT(387$);


;
;
;     Model statements for module:  BasicProcess.Separate 20 (Split flow for PreMS C)
;
387$        DUPLICATE,    100 - 0:
                          1,2502$,0:NEXT(2501$);

2501$       ASSIGN:       Split flow for PreMS C.NumberOut Orig=Split flow for PreMS C.NumberOut Orig
+ 1:NEXT(512$);
```

```
2502$     ASSIGN:     Split flow for PreMS C.NumberOut Dup=Split flow for PreMS C.NumberOut Dup
+ 1:NEXT(574$);


;
;
;    Model statements for module:  AdvancedProcess.Hold 9 (Wait for Signal from Acquisition PreC)
;
512$      SCAN:      contract start PreC==1:NEXT(386$);


;
;
;    Model statements for module:  BasicProcess.Process 178 (Prepare Concept of Operation)
;
386$      ASSIGN:     Prepare Concept of Operation.NumberIn=Prepare Concept of
Operation.NumberIn + 1:
              Prepare Concept of Operation.WIP=Prepare Concept of Operation.WIP+1;
2504$     DELAY:
              TRIA(0.6*SDD original contract length, 0.7*SDD original contract length, 0.8*SDD
original contract length),,
              VA;
2551$     ASSIGN:     Prepare Concept of Operation.NumberOut=Prepare Concept of
Operation.NumberOut + 1:
              Prepare Concept of Operation.WIP=Prepare Concept of Operation.WIP-1:NEXT(388$);


;
;
;    Model statements for module:  BasicProcess.Decide 146 (Decision to pursue requirements PreC)
;
388$      BRANCH,     1:
              With,(98)/100,2554$,Yes:
              Else,2555$,Yes;
2554$     ASSIGN:     Decision to pursue requirements PreC.NumberOut True=
              Decision to pursue requirements PreC.NumberOut True + 1:NEXT(393$);

2555$     ASSIGN:     Decision to pursue requirements PreC.NumberOut False=
              Decision to pursue requirements PreC.NumberOut False + 1:NEXT(389$);


;
```

```
;
;    Model statements for module:  BasicProcess.Process 180 (Draft briefing and materials PreC)
;
393$         ASSIGN:       Draft briefing and materials PreC.NumberIn=Draft briefing and materials
PreC.NumberIn + 1:
                    Draft briefing and materials PreC.WIP=Draft briefing and materials PreC.WIP+1;
2557$        DELAY:        Triangular(10,31,40),,VA;
2604$        ASSIGN:       Draft briefing and materials PreC.NumberOut=Draft briefing and materials
PreC.NumberOut + 1:
                    Draft briefing and materials PreC.WIP=Draft briefing and materials PreC.WIP-
1:NEXT(394$);


;
;
;    Model statements for module:  BasicProcess.Decide 148 (MAJCOM A Letters Coordinate and Concur
PreC)
;
394$         BRANCH,       1:
                    With,(90)/100,2607$,Yes:
                    Else,2608$,Yes;
2607$        ASSIGN:       MAJCOM A Letters Coordinate and Concur PreC.NumberOut True=
                    MAJCOM A Letters Coordinate and Concur PreC.NumberOut True + 1:NEXT(395$);

2608$        ASSIGN:       MAJCOM A Letters Coordinate and Concur PreC.NumberOut False=
                    MAJCOM A Letters Coordinate and Concur PreC.NumberOut False + 1:NEXT(401$);


;
;
;    Model statements for module:  BasicProcess.Process 181 (Update and Schedule Calendar PreC)
;
395$         ASSIGN:       Update and Schedule Calendar PreC.NumberIn=Update and Schedule Calendar
PreC.NumberIn + 1:
                    Update and Schedule Calendar PreC.WIP=Update and Schedule Calendar PreC.WIP+1;
2610$        DELAY:        Triangular(3,12,15),,NVA;
2657$        ASSIGN:       Update and Schedule Calendar PreC.NumberOut=Update and Schedule Calendar
PreC.NumberOut + 1:
                    Update and Schedule Calendar PreC.WIP=Update and Schedule Calendar PreC.WIP-
1:NEXT(396$);
```

```
;
;
;     Model statements for module:  BasicProcess.Decide 149 (PreRSR MAJCOM A8 PreC)
;
396$         BRANCH,       1:
                         With,(99)/100,2660$,Yes:
                         Else,2661$,Yes;
2660$        ASSIGN:       PreRSR MAJCOM A8 PreC.NumberOut True=PreRSR MAJCOM A8
PreC.NumberOut True + 1:NEXT(397$);

2661$        ASSIGN:       PreRSR MAJCOM A8 PreC.NumberOut False=PreRSR MAJCOM A8
PreC.NumberOut False + 1:NEXT(401$);



;
;
;     Model statements for module:  BasicProcess.Process 182 (Finalize RSR and calendar items PreC)
;
397$         ASSIGN:       Finalize RSR and calendar items PreC.NumberIn=Finalize RSR and calendar items
PreC.NumberIn + 1:
                         Finalize RSR and calendar items PreC.WIP=Finalize RSR and calendar items PreC.WIP+1;
2663$        DELAY:        Triangular(21,28,35),,NVA;
2710$        ASSIGN:       Finalize RSR and calendar items PreC.NumberOut=Finalize RSR and calendar
items PreC.NumberOut + 1:
                         Finalize RSR and calendar items PreC.WIP=Finalize RSR and calendar items PreC.WIP-
1:NEXT(398$);



;
;
;     Model statements for module:  BasicProcess.Decide 150 (RSR HQ USAF A5R PreC)
;
398$         BRANCH,       1:
                         With,(98)/100,2713$,Yes:
                         Else,2714$,Yes;
2713$        ASSIGN:       RSR HQ USAF A5R PreC.NumberOut True=RSR HQ USAF A5R PreC.NumberOut
True + 1:NEXT(403$);

2714$        ASSIGN:       RSR HQ USAF A5R PreC.NumberOut False=RSR HQ USAF A5R PreC.NumberOut
False + 1:NEXT(401$);
```

```
;
;
;    Model statements for module:  BasicProcess.Process 184 (Form High Performance Team PreC)
;
403$        ASSIGN:       Form High Performance Team PreC.NumberIn=Form High Performance Team
PreC.NumberIn + 1:
                        Form High Performance Team PreC.WIP=Form High Performance Team PreC.WIP+1;
2716$       DELAY:        Triangular(30,41,45),,Wait;
2763$       ASSIGN:       Form High Performance Team PreC.NumberOut=Form High Performance Team
PreC.NumberOut + 1:
                        Form High Performance Team PreC.WIP=Form High Performance Team PreC.WIP-
1:NEXT(404$);


;
;
;    Model statements for module:  BasicProcess.Process 185 (High Performance Team work preC)
;
404$        ASSIGN:       High Performance Team work preC.NumberIn=High Performance Team work
preC.NumberIn + 1:
                        High Performance Team work preC.WIP=High Performance Team work preC.WIP+1;
2767$       DELAY:        Triangular(5,6,7),,VA;
2814$       ASSIGN:       High Performance Team work preC.NumberOut=High Performance Team work
preC.NumberOut + 1:
                        High Performance Team work preC.WIP=High Performance Team work preC.WIP-
1:NEXT(628$);


;
;
;    Model statements for module:  BasicProcess.Assign 127 (Release KPPs to Acquisition PreC)
;
628$        ASSIGN:       KPPs Ready PreC=1:NEXT(405$);


;
;
;    Model statements for module:  BasicProcess.Decide 153 (Determine document approval path preC)
;
405$        BRANCH,       1:
                        If,ACAT Level==3,466$,Yes:
                        If,ACAT Level==2,438$,Yes:
```

```
                    Else,406$,Yes;

;
;
;     Model statements for module:  BasicProcess.Process 186 (Joint Interest preC)
;
406$         ASSIGN:       Joint Interest preC.NumberIn=Joint Interest preC.NumberIn + 1:
                    Joint Interest preC.WIP=Joint Interest preC.WIP+1:NEXT(407$);

407$         ASSIGN:       draft document preC joint interest.NumberIn=draft document preC joint
interest.NumberIn + 1:
                    draft document preC joint interest.WIP=draft document preC joint interest.WIP+1;
2871$        DELAY:        Triangular(30,55,60),,VA;
2918$        ASSIGN:       draft document preC joint interest.NumberOut=draft document preC joint
interest.NumberOut + 1:
                    draft document preC joint interest.WIP=draft document preC joint interest.WIP-
1:NEXT(434$);

434$         QUEUE,        Wait for successful Design Readiness Review Joint PreC.Queue;
          SCAN:         DRR Success==1:NEXT(408$);

408$         ASSIGN:       Air Staff processes joint int preC.NumberIn=Air Staff processes joint int
preC.NumberIn + 1:
                    Air Staff processes joint int preC.WIP=Air Staff processes joint int preC.WIP+1;
2922$        DELAY:        Triangular(21,25,42),,VA;
2969$        ASSIGN:       Air Staff processes joint int preC.NumberOut=Air Staff processes joint int
preC.NumberOut + 1:
                    Air Staff processes joint int preC.WIP=Air Staff processes joint int preC.WIP-
1:NEXT(409$);

409$         BRANCH,       1:
                    With,(95)/100,2972$,Yes:
                    Else,2973$,Yes;
2972$        ASSIGN:       Critical Comments? joint int preC.NumberOut True=
                    Critical Comments? joint int preC.NumberOut True + 1:NEXT(410$);

2973$        ASSIGN:       Critical Comments? joint int preC.NumberOut False=
                    Critical Comments? joint int preC.NumberOut False + 1:NEXT(413$);

410$         ASSIGN:       Comment Resolution joint int preC.NumberIn=Comment Resolution joint int
preC.NumberIn + 1:
                    Comment Resolution joint int preC.WIP=Comment Resolution joint int preC.WIP+1;
```

```
2975$       DELAY:       Triangular(15,30,45),,VA;
3022$       ASSIGN:      Comment Resolution joint int preC.NumberOut=Comment Resolution joint int
preC.NumberOut + 1:
                    Comment Resolution joint int preC.WIP=Comment Resolution joint int preC.WIP-
1:NEXT(411$);

411$        BRANCH,      1:
                    With,(99)/100,3025$,Yes:
                    Else,3026$,Yes;
3025$       ASSIGN:      MAJCOM Approval? joint int preC.NumberOut True=MAJCOM Approval? joint
int preC.NumberOut True + 1
                    :NEXT(413$);

3026$       ASSIGN:      MAJCOM Approval? joint int preC.NumberOut False=MAJCOM Approval? joint
int preC.NumberOut False + 1
                    :NEXT(412$);

413$        ASSIGN:      AFROC Preparations joint int preC.NumberIn=AFROC Preparations joint int
preC.NumberIn + 1:
                    AFROC Preparations joint int preC.WIP=AFROC Preparations joint int preC.WIP+1;
3028$       DELAY:       Triangular(30,45,60),,VA;
3075$       ASSIGN:      AFROC Preparations joint int preC.NumberOut=AFROC Preparations joint int
preC.NumberOut + 1:
                    AFROC Preparations joint int preC.WIP=AFROC Preparations joint int preC.WIP-
1:NEXT(414$);

414$        BRANCH,      1:
                    With,(90)/100,3078$,Yes:
                    Else,3079$,Yes;
3078$       ASSIGN:      AFROC Decision joint int preC.NumberOut True=AFROC Decision joint int
preC.NumberOut True + 1
                    :NEXT(415$);

3079$       ASSIGN:      AFROC Decision joint int preC.NumberOut False=AFROC Decision joint int
preC.NumberOut False + 1
                    :NEXT(419$);

415$        BRANCH,      1:
                    With,(25)/100,3080$,Yes:
                    Else,3081$,Yes;
3080$       ASSIGN:      Post AFROC actions joint int preC.NumberOut True=
                    Post AFROC actions joint int preC.NumberOut True + 1:NEXT(420$);
```

```
3081$     ASSIGN:    Post AFROC actions joint int preC.NumberOut False=
                Post AFROC actions joint int preC.NumberOut False + 1:NEXT(421$);

420$     ASSIGN:    Post AFROC actions PreC.NumberIn=Post AFROC actions PreC.NumberIn + 1:
                Post AFROC actions PreC.WIP=Post AFROC actions PreC.WIP+1;
3083$     DELAY:     Triangular(1,11,15),,VA;
3130$     ASSIGN:    Post AFROC actions PreC.NumberOut=Post AFROC actions PreC.NumberOut + 1:
                Post AFROC actions PreC.WIP=Post AFROC actions PreC.WIP-1:NEXT(421$);

421$     BRANCH,    1:
                With,(50)/100,3133$,Yes:
                Else,3134$,Yes;
3133$     ASSIGN:    Document Review Phase PreC.NumberOut True=Document Review Phase
PreC.NumberOut True + 1:NEXT(422$);

3134$     ASSIGN:    Document Review Phase PreC.NumberOut False=Document Review Phase
PreC.NumberOut False + 1
                :NEXT(426$);

422$     ASSIGN:    Document Reveiw Phase 2 Flag Level PreC.NumberIn=
                Document Reveiw Phase 2 Flag Level PreC.NumberIn + 1:
                Document Reveiw Phase 2 Flag Level PreC.WIP=Document Reveiw Phase 2 Flag Level
PreC.WIP+1;
3136$     DELAY:     Triangular(21,38,42),,VA;
3183$     ASSIGN:    Document Reveiw Phase 2 Flag Level PreC.NumberOut=
                Document Reveiw Phase 2 Flag Level PreC.NumberOut + 1:
                Document Reveiw Phase 2 Flag Level PreC.WIP=Document Reveiw Phase 2 Flag Level
PreC.WIP-1
                :NEXT(423$);

423$     ASSIGN:    Resolving Flag level comments PreC.NumberIn=Resolving Flag level comments
PreC.NumberIn + 1:
                Resolving Flag level comments PreC.WIP=Resolving Flag level comments PreC.WIP+1;
3187$     DELAY:     Triangular(15,27,30),,VA;
3234$     ASSIGN:    Resolving Flag level comments PreC.NumberOut=Resolving Flag level comments
PreC.NumberOut + 1:
                Resolving Flag level comments PreC.WIP=Resolving Flag level comments PreC.WIP-
1:NEXT(424$);

424$     BRANCH,    1:
                With,(99)/100,3237$,Yes:
```

```
                    Else,3238$,Yes;
3237$       ASSIGN:       MAJCOM approval PreC.NumberOut True=MAJCOM approval PreC.NumberOut
True + 1:NEXT(426$);

3238$       ASSIGN:       MAJCOM approval PreC.NumberOut False=MAJCOM approval PreC.NumberOut
False + 1:NEXT(425$);

426$        ASSIGN:       Functional Capabilities Board PreC.NumberIn=Functional Capabilities Board
PreC.NumberIn + 1:
                    Functional Capabilities Board PreC.WIP=Functional Capabilities Board PreC.WIP+1;
3240$       DELAY:        Triangular(7,14,21),,VA;
3287$       ASSIGN:       Functional Capabilities Board PreC.NumberOut=Functional Capabilities Board
PreC.NumberOut + 1:
                    Functional Capabilities Board PreC.WIP=Functional Capabilities Board PreC.WIP-
1:NEXT(427$);

427$        ASSIGN:       Joint Capabilities Board PreC.NumberIn=Joint Capabilities Board PreC.NumberIn
+ 1:
                    Joint Capabilities Board PreC.WIP=Joint Capabilities Board PreC.WIP+1;
3291$       DELAY:        Triangular(7,14,21),,VA;
3338$       ASSIGN:       Joint Capabilities Board PreC.NumberOut=Joint Capabilities Board
PreC.NumberOut + 1:
                    Joint Capabilities Board PreC.WIP=Joint Capabilities Board PreC.WIP-1:NEXT(428$);

428$        BRANCH,       1:
                    With,(15)/100,3341$,Yes:
                    Else,3342$,Yes;
3341$       ASSIGN:       JCB issues PreC.NumberOut True=JCB issues PreC.NumberOut True +
1:NEXT(429$);

3342$       ASSIGN:       JCB issues PreC.NumberOut False=JCB issues PreC.NumberOut False +
1:NEXT(430$);

429$        ASSIGN:       Resolve JCB issues PreC.NumberIn=Resolve JCB issues PreC.NumberIn + 1:
                    Resolve JCB issues PreC.WIP=Resolve JCB issues PreC.WIP+1;
3344$       DELAY:        Triangular(10,15,20),,VA;
3391$       ASSIGN:       Resolve JCB issues PreC.NumberOut=Resolve JCB issues PreC.NumberOut + 1:
                    Resolve JCB issues PreC.WIP=Resolve JCB issues PreC.WIP-1:NEXT(430$);

430$        ASSIGN:       JROC preparations PreC.NumberIn=JROC preparations PreC.NumberIn + 1:
                    JROC preparations PreC.WIP=JROC preparations PreC.WIP+1;
3395$       DELAY:        Triangular(14,25,30),,VA;
```

```
3442$       ASSIGN:       JROC preparations PreC.NumberOut=JROC preparations PreC.NumberOut + 1:
                   JROC preparations PreC.WIP=JROC preparations PreC.WIP-1:NEXT(431$);

431$        BRANCH,       1:
                   With,(98)/100,3445$,Yes:
                   Else,3446$,Yes;
3445$       ASSIGN:       JROC PreC.NumberOut True=JROC PreC.NumberOut True + 1:NEXT(2867$);

3446$       ASSIGN:       JROC PreC.NumberOut False=JROC PreC.NumberOut False + 1:NEXT(432$);

432$        ASSIGN:       Resolve JROC issues PreC.NumberIn=Resolve JROC issues PreC.NumberIn + 1:
                   Resolve JROC issues PreC.WIP=Resolve JROC issues PreC.WIP+1;
3448$       DELAY:        Triangular(42,51,60),,VA;
3495$       ASSIGN:       Resolve JROC issues PreC.NumberOut=Resolve JROC issues PreC.NumberOut + 1:
                   Resolve JROC issues PreC.WIP=Resolve JROC issues PreC.WIP-1:NEXT(2867$);

425$        ASSIGN:       Hold for a year later in process PreC.NumberIn=Hold for a year later in process
PreC.NumberIn + 1:
                   Hold for a year later in process PreC.WIP=Hold for a year later in process PreC.WIP+1;
3499$       DELAY:        Triangular(270,300,365),,NVA;
3546$       ASSIGN:       Hold for a year later in process PreC.NumberOut=Hold for a year later in process
PreC.NumberOut + 1:
                   Hold for a year later in process PreC.WIP=Hold for a year later in process PreC.WIP-
1:NEXT(426$);

419$        BRANCH,       1:
                   If,AFROC Count PreC==1,3549$,Yes:
                   Else,3550$,Yes;
3549$       ASSIGN:       Check for previous path joint int preC.NumberOut True=
                   Check for previous path joint int preC.NumberOut True + 1:NEXT(433$);

3550$       ASSIGN:       Check for previous path joint int preC.NumberOut False=
                   Check for previous path joint int preC.NumberOut False + 1:NEXT(418$);

433$        ASSIGN:       Kill time at AFROC joint interest PreC=TNOW:
                   TFIN=TNOW:NEXT(436$);

436$        TALLY:        Record 24,INT(SimTime),1:NEXT(417$);

417$        ASSIGN:       Death at AFROC joint int preC.NumberOut=Death at AFROC joint int
preC.NumberOut + 1;
3551$       DISPOSE:      Yes;
```

```
418$      ASSIGN:     AFROC Count PreC=1:NEXT(416$);

416$      BRANCH,     1:
                With,(99)/100,3552$,Yes:
                Else,3553$,Yes;
3552$     ASSIGN:     Dead activity joint int preC.NumberOut True=Dead activity joint int
preC.NumberOut True + 1
                :NEXT(433$);

3553$     ASSIGN:     Dead activity joint int preC.NumberOut False=Dead activity joint int
preC.NumberOut False + 1
                :NEXT(410$);

412$      ASSIGN:     Hold for a year PreC.NumberIn=Hold for a year PreC.NumberIn + 1:
                Hold for a year PreC.WIP=Hold for a year PreC.WIP+1;
3555$     DELAY:      Triangular(270,300,365),,NVA;
3602$     ASSIGN:     Hold for a year PreC.NumberOut=Hold for a year PreC.NumberOut + 1:
                Hold for a year PreC.WIP=Hold for a year PreC.WIP-1:NEXT(413$);

2867$     ASSIGN:     Joint Interest preC.NumberOut=Joint Interest preC.NumberOut + 1:
                Joint Interest preC.WIP=Joint Interest preC.WIP-1:NEXT(437$);


;
;
;   Model statements for module:  BasicProcess.Assign 84 (Record CPD)
;
437$      ASSIGN:     CPD=1:
                CPD Time=TNOW:NEXT(553$);


;
;
;   Model statements for module:  BasicProcess.Batch 19 (Receipt of approved CPD)
;
553$      QUEUE,      Receipt of approved CPD.Queue;
3605$     GROUP,      ,Permanent:2,Last:NEXT(3606$);

3606$     ASSIGN:     Receipt of approved CPD.NumberOut=Receipt of approved CPD.NumberOut +
1:NEXT(496$);
```

```
;
;
;     Model statements for module:  BasicProcess.Decide 182 (MDA Milestone approval PreC)
;
496$         BRANCH,       1:
                        With,(90)/100,3607$,Yes:
                        Else,3608$,Yes;
3607$        ASSIGN:       MDA Milestone approval PreC.NumberOut True=MDA Milestone approval
PreC.NumberOut True + 1
                        :NEXT(500$);

3608$        ASSIGN:       MDA Milestone approval PreC.NumberOut False=MDA Milestone approval
PreC.NumberOut False + 1
                        :NEXT(497$);


;
;
;     Model statements for module:  BasicProcess.Assign 90 (MS C decision)
;
500$         ASSIGN:       MS C decision time=TNOW:NEXT(555$);


;
;
;     Model statements for module:  BasicProcess.Assign 103 (End simulation)
;
555$         ASSIGN:       TFIN=TNOW:NEXT(671$);


;
;
;     Model statements for module:  BasicProcess.Record 15 (Record 15)
;
671$         TALLY:        Record 15,INT(SimTime),1:NEXT(554$);


;
;
;     Model statements for module:  BasicProcess.Dispose 40 (End at MS C)
;
```

```
554$         ASSIGN:       End at MS C.NumberOut=End at MS C.NumberOut + 1;
3609$        DISPOSE:      No;


;
;
;     Model statements for module:  BasicProcess.Decide 183 (Check for previous MDA decision attempt
preC)
;
497$         BRANCH,       1:
                        If,MS C approval attempt==1,3610$,Yes:
                        Else,3611$,Yes;
3610$        ASSIGN:       Check for previous MDA decision attempt preC.NumberOut True=
                        Check for previous MDA decision attempt preC.NumberOut True + 1:NEXT(556$);

3611$        ASSIGN:       Check for previous MDA decision attempt preC.NumberOut False=
                        Check for previous MDA decision attempt preC.NumberOut False + 1:NEXT(499$);


;
;
;     Model statements for module:  BasicProcess.Assign 104 (End Simulation PreC 4)
;
556$         ASSIGN:       Kill time at MS C decision=TNOW:
                        TFIN=TNOW:NEXT(670$);


;
;
;     Model statements for module:  BasicProcess.Record 14 (Record 14)
;
670$         TALLY:        Record 14,INT(SimTime),1:NEXT(498$);


;
;
;     Model statements for module:  BasicProcess.Dispose 38 (Kill at MS C decision)
;
498$         ASSIGN:       Kill at MS C decision.NumberOut=Kill at MS C decision.NumberOut + 1;
3612$        DISPOSE:      No;
```

```
;
;
;    Model statements for module:  BasicProcess.Assign 89 (Assign counter to MDA loop preC)
;
499$         ASSIGN:       MS C approval attempt=1:NEXT(634$);


;
;
;    Model statements for module:  BasicProcess.Process 272 (Delay to repeat required steps PreC)
;
634$         ASSIGN:       Delay to repeat required steps PreC.NumberIn=Delay to repeat required steps
PreC.NumberIn + 1:
                    Delay to repeat required steps PreC.WIP=Delay to repeat required steps PreC.WIP+1;
3614$        DELAY:        Triangular(60,120,180),,VA;
3661$        ASSIGN:       Delay to repeat required steps PreC.NumberOut=Delay to repeat required steps
PreC.NumberOut + 1:
                    Delay to repeat required steps PreC.WIP=Delay to repeat required steps PreC.WIP-
1:NEXT(496$);


;
;
;    Model statements for module:  BasicProcess.Process 214 (Independent document preC)
;
466$         ASSIGN:       Independent document preC.NumberIn=Independent document preC.NumberIn
+ 1:
                    Independent document preC.WIP=Independent document preC.WIP+1:NEXT(467$);

467$         ASSIGN:       Draft document indep preC.NumberIn=Draft document indep preC.NumberIn +
1:
                    Draft document indep preC.WIP=Draft document indep preC.WIP+1;
3716$        DELAY:        Triangular(30,55,60),,VA;
3763$        ASSIGN:       Draft document indep preC.NumberOut=Draft document indep
preC.NumberOut + 1:
                    Draft document indep preC.WIP=Draft document indep preC.WIP-1:NEXT(482$);

482$         QUEUE,        Wait for successful Design Readiness Review Indep PreC.Queue;
          SCAN:        DRR Success==1:NEXT(468$);

468$         ASSIGN:       Air staff process indep preC.NumberIn=Air staff process indep preC.NumberIn +
1:
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                  Air staff process indep preC.WIP=Air staff process indep preC.WIP+1;
3767$      DELAY:      Triangular(21,29,42),,VA;
3814$      ASSIGN:     Air staff process indep preC.NumberOut=Air staff process indep
preC.NumberOut + 1:
                  Air staff process indep preC.WIP=Air staff process indep preC.WIP-1:NEXT(469$);

469$       BRANCH,     1:
                  With,(95)/100,3817$,Yes:
                  Else,3818$,Yes;
3817$      ASSIGN:     Critical comments indep preC.NumberOut True=Critical comments indep
preC.NumberOut True + 1
                  :NEXT(470$);

3818$      ASSIGN:     Critical comments indep preC.NumberOut False=Critical comments indep
preC.NumberOut False + 1
                  :NEXT(473$);

470$       ASSIGN:     comment resolution indep preC.NumberIn=comment resolution indep
preC.NumberIn + 1:
                  comment resolution indep preC.WIP=comment resolution indep preC.WIP+1;
3820$      DELAY:      Triangular(15,30,45),,VA;
3867$      ASSIGN:     comment resolution indep preC.NumberOut=comment resolution indep
preC.NumberOut + 1:
                  comment resolution indep preC.WIP=comment resolution indep preC.WIP-
1:NEXT(471$);

471$       BRANCH,     1:
                  With,(99)/100,3870$,Yes:
                  Else,3871$,Yes;
3870$      ASSIGN:     MAJCOM approval indep preC.NumberOut True=MAJCOM approval indep
preC.NumberOut True + 1:NEXT(473$);

3871$      ASSIGN:     MAJCOM approval indep preC.NumberOut False=MAJCOM approval indep
preC.NumberOut False + 1
                  :NEXT(472$);

473$       ASSIGN:     AFROC Preparations indep preC.NumberIn=AFROC Preparations indep
preC.NumberIn + 1:
                  AFROC Preparations indep preC.WIP=AFROC Preparations indep preC.WIP+1;
3873$      DELAY:      Triangular(30,45,60),,VA;
3920$      ASSIGN:     AFROC Preparations indep preC.NumberOut=AFROC Preparations indep
preC.NumberOut + 1:
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                    AFROC Preparations indep preC.WIP=AFROC Preparations indep preC.WIP-
1:NEXT(474$);

474$        BRANCH,       1:
                    With,(90)/100,3923$,Yes:
                    Else,3924$,Yes;
3923$       ASSIGN:       AFROC decision indep preC.NumberOut True=AFROC decision indep
preC.NumberOut True + 1:NEXT(479$);

3924$       ASSIGN:       AFROC decision indep preC.NumberOut False=AFROC decision indep
preC.NumberOut False + 1:NEXT(478$);

479$        BRANCH,       1:
                    With,(25)/100,3925$,Yes:
                    Else,3926$,Yes;
3925$       ASSIGN:       Post AFROC actions indep preC.NumberOut True=Post AFROC actions indep
preC.NumberOut True + 1
                    :NEXT(480$);

3926$       ASSIGN:       Post AFROC actions indep preC.NumberOut False=Post AFROC actions indep
preC.NumberOut False + 1
                    :NEXT(3712$);

480$        ASSIGN:       Accomplish Post AFROC actions indep preC.NumberIn=
                    Accomplish Post AFROC actions indep preC.NumberIn + 1:
                    Accomplish Post AFROC actions indep preC.WIP=Accomplish Post AFROC actions indep
preC.WIP+1;
3928$       DELAY:        Triangular(1,11,15),,VA;
3975$       ASSIGN:       Accomplish Post AFROC actions indep preC.NumberOut=
                    Accomplish Post AFROC actions indep preC.NumberOut + 1:
                    Accomplish Post AFROC actions indep preC.WIP=Accomplish Post AFROC actions indep
preC.WIP-1
                    :NEXT(3712$);

478$        BRANCH,       1:
                    If,AFROC Count PreC==1,3978$,Yes:
                    Else,3979$,Yes;
3978$       ASSIGN:       Check for previous path indep preC.NumberOut True=
                    Check for previous path indep preC.NumberOut True + 1:NEXT(481$);

3979$       ASSIGN:       Check for previous path indep preC.NumberOut False=
                    Check for previous path indep preC.NumberOut False + 1:NEXT(477$);
```

```
481$        ASSIGN:       Kill time at AFROC indep preC=TNOW:
                    TFIN=TNOW:NEXT(484$);

484$        TALLY:        Record 26,INT(SimTime),1:NEXT(476$);

476$        ASSIGN:       Death at AFROC indep preC.NumberOut=Death at AFROC indep preC.NumberOut
+ 1;
3980$       DISPOSE:      Yes;

477$        ASSIGN:       AFROC Count PreC=1:NEXT(475$);

475$        BRANCH,       1:
                    With,(99)/100,3981$,Yes:
                    Else,3982$,Yes;
3981$       ASSIGN:       Dead activity indep preC.NumberOut True=Dead activity indep preC.NumberOut
True + 1:NEXT(481$);

3982$       ASSIGN:       Dead activity indep preC.NumberOut False=Dead activity indep
preC.NumberOut False + 1:NEXT(470$);

472$        ASSIGN:       Hold for a year later in process indep preC.NumberIn=
                    Hold for a year later in process indep preC.NumberIn + 1:
                    Hold for a year later in process indep preC.WIP=Hold for a year later in process indep
preC.WIP+1;
3984$       DELAY:        Triangular(270,300,365),,NVA;
4031$       ASSIGN:       Hold for a year later in process indep preC.NumberOut=
                    Hold for a year later in process indep preC.NumberOut + 1:
                    Hold for a year later in process indep preC.WIP=Hold for a year later in process indep
preC.WIP-1
                    :NEXT(473$);

3712$       ASSIGN:       Independent document preC.NumberOut=Independent document
preC.NumberOut + 1:
                    Independent document preC.WIP=Independent document preC.WIP-1:NEXT(437$);



;
;
;    Model statements for module:  BasicProcess.Process 201 (Joint Integration PreC)
;
438$        ASSIGN:       Joint Integration PreC.NumberIn=Joint Integration PreC.NumberIn + 1:
```

```
                    Joint Integration PreC.WIP=Joint Integration PreC.WIP+1:NEXT(439$);

439$       ASSIGN:       Draft document joint integ preC.NumberIn=Draft document joint integ
preC.NumberIn + 1:
                    Draft document joint integ preC.WIP=Draft document joint integ preC.WIP+1;
4086$      DELAY:        Triangular(30,55,60),,VA;
4133$      ASSIGN:       Draft document joint integ preC.NumberOut=Draft document joint integ
preC.NumberOut + 1:
                    Draft document joint integ preC.WIP=Draft document joint integ preC.WIP-
1:NEXT(463$);

463$       QUEUE,        Wait for successful Design Readiness Review Interest PreC.Queue;
           SCAN:         DRR Success==1:NEXT(440$);

440$       ASSIGN:       Air staff process joint integ preC.NumberIn=Air staff process joint integ
preC.NumberIn + 1:
                    Air staff process joint integ preC.WIP=Air staff process joint integ preC.WIP+1;
4137$      DELAY:        Triangular(21,29,42),,VA;
4184$      ASSIGN:       Air staff process joint integ preC.NumberOut=Air staff process joint integ
preC.NumberOut + 1:
                    Air staff process joint integ preC.WIP=Air staff process joint integ preC.WIP-
1:NEXT(441$);

441$       BRANCH,       1:
                    With,(95)/100,4187$,Yes:
                    Else,4188$,Yes;
4187$      ASSIGN:       Critical comments joint integ preC.NumberOut True=
                    Critical comments joint integ preC.NumberOut True + 1:NEXT(442$);

4188$      ASSIGN:       Critical comments joint integ preC.NumberOut False=
                    Critical comments joint integ preC.NumberOut False + 1:NEXT(444$);

442$       ASSIGN:       comment resolution joint integ preC.NumberIn=comment resolution joint integ
preC.NumberIn + 1:
                    comment resolution joint integ preC.WIP=comment resolution joint integ preC.WIP+1;
4190$      DELAY:        Triangular(15,30,45),,VA;
4237$      ASSIGN:       comment resolution joint integ preC.NumberOut=comment resolution joint
integ preC.NumberOut + 1:
                    comment resolution joint integ preC.WIP=comment resolution joint integ preC.WIP-
1:NEXT(443$);

443$       BRANCH,       1:
```

```
                    With,(99)/100,4240$,Yes:
                    Else,4241$,Yes;
4240$      ASSIGN:     MAJCOM approval joint integ preC.NumberOut True=MAJCOM approval joint
integ preC.NumberOut True + 1
                    :NEXT(444$);

4241$      ASSIGN:     MAJCOM approval joint integ preC.NumberOut False=
                    MAJCOM approval joint integ preC.NumberOut False + 1:NEXT(450$);

444$       BRANCH,     1:
                    With,(50)/100,4242$,Yes:
                    Else,4243$,Yes;
4242$      ASSIGN:     Document review phase joint integ preC.NumberOut True=
                    Document review phase joint integ preC.NumberOut True + 1:NEXT(445$);

4243$      ASSIGN:     Document review phase joint integ preC.NumberOut False=
                    Document review phase joint integ preC.NumberOut False + 1:NEXT(448$);

445$       ASSIGN:     Document review phase 2 flag level joint integ preC.NumberIn=
                    Document review phase 2 flag level joint integ preC.NumberIn + 1:
                    Document review phase 2 flag level joint integ preC.WIP=
                    Document review phase 2 flag level joint integ preC.WIP+1;
4245$      DELAY:      Triangular(21,34,42),,VA;
4292$      ASSIGN:     Document review phase 2 flag level joint integ preC.NumberOut=
                    Document review phase 2 flag level joint integ preC.NumberOut + 1:
                    Document review phase 2 flag level joint integ preC.WIP=
                    Document review phase 2 flag level joint integ preC.WIP-1:NEXT(446$);

446$       ASSIGN:     Resolving flag level comments joint integ preC.NumberIn=
                    Resolving flag level comments joint integ preC.NumberIn + 1:
                    Resolving flag level comments joint integ preC.WIP=
                    Resolving flag level comments joint integ preC.WIP+1;
4296$      DELAY:      Triangular(15,28,30),,VA;
4343$      ASSIGN:     Resolving flag level comments joint integ preC.NumberOut=
                    Resolving flag level comments joint integ preC.NumberOut + 1:
                    Resolving flag level comments joint integ preC.WIP=
                    Resolving flag level comments joint integ preC.WIP-1:NEXT(447$);

447$       BRANCH,     1:
                    With,(99)/100,4346$,Yes:
                    Else,4347$,Yes;
4346$      ASSIGN:     MAJCOM approval later on joint integ preC.NumberOut True=
```

```
MAJCOM approval later on joint integ preC.NumberOut True + 1:NEXT(448$);

4347$    ASSIGN:    MAJCOM approval later on joint integ preC.NumberOut False=
                MAJCOM approval later on joint integ preC.NumberOut False + 1:NEXT(451$);

448$     ASSIGN:    Interoperability Certification joint integ preC.NumberIn=
                Interoperability Certification joint integ preC.NumberIn + 1:
                Interoperability Certification joint integ preC.WIP=
                Interoperability Certification joint integ preC.WIP+1;
4349$    DELAY:     Triangular(10,15,20),,VA;
4396$    ASSIGN:    Interoperability Certification joint integ preC.NumberOut=
                Interoperability Certification joint integ preC.NumberOut + 1:
                Interoperability Certification joint integ preC.WIP=
                Interoperability Certification joint integ preC.WIP-1:NEXT(449$);

449$     ASSIGN:    AFROC Preparations joint integ preC.NumberIn=AFROC Preparations joint integ
preC.NumberIn + 1:
                AFROC Preparations joint integ preC.WIP=AFROC Preparations joint integ preC.WIP+1;
4400$    DELAY:     Triangular(30,45,60),,VA;
4447$    ASSIGN:    AFROC Preparations joint integ preC.NumberOut=AFROC Preparations joint
integ preC.NumberOut + 1:
                AFROC Preparations joint integ preC.WIP=AFROC Preparations joint integ preC.WIP-
1:NEXT(452$);

452$     BRANCH,    1:
                With,(90)/100,4450$,Yes:
                Else,4451$,Yes;
4450$    ASSIGN:    AFROC decision joint integ preC.NumberOut True=AFROC decision joint integ
preC.NumberOut True + 1
                :NEXT(457$);

4451$    ASSIGN:    AFROC decision joint integ preC.NumberOut False=AFROC decision joint integ
preC.NumberOut False + 1
                :NEXT(456$);

457$     BRANCH,    1:
                With,(25)/100,4452$,Yes:
                Else,4453$,Yes;
4452$    ASSIGN:    Post AFROC actions joint integ preC.NumberOut True=
                Post AFROC actions joint integ preC.NumberOut True + 1:NEXT(458$);

4453$    ASSIGN:    Post AFROC actions joint integ preC.NumberOut False=
```

```
        Post AFROC actions joint integ preC.NumberOut False + 1:NEXT(459$);

458$     ASSIGN:    Accomplish Post AFROC actions joint integ preC.NumberIn=
        Accomplish Post AFROC actions joint integ preC.NumberIn + 1:
        Accomplish Post AFROC actions joint integ preC.WIP=
        Accomplish Post AFROC actions joint integ preC.WIP+1;
4455$    DELAY:     Triangular(1,11,15),,VA;
4502$    ASSIGN:    Accomplish Post AFROC actions joint integ preC.NumberOut=
        Accomplish Post AFROC actions joint integ preC.NumberOut + 1:
        Accomplish Post AFROC actions joint integ preC.WIP=
        Accomplish Post AFROC actions joint integ preC.WIP-1:NEXT(459$);

459$     ASSIGN:    document signing and validation joint integ preC.NumberIn=
        document signing and validation joint integ preC.NumberIn + 1:
        document signing and validation joint integ preC.WIP=
        document signing and validation joint integ preC.WIP+1;
4506$    DELAY:     Triangular(14,26,30),,VA;
4553$    ASSIGN:    document signing and validation joint integ preC.NumberOut=
        document signing and validation joint integ preC.NumberOut + 1:
        document signing and validation joint integ preC.WIP=
        document signing and validation joint integ preC.WIP-1:NEXT(460$);

460$     BRANCH,    1:
        With,(99)/100,4556$,Yes:
        Else,4557$,Yes;
4556$    ASSIGN:    Final AFROC approval joint integ preC.NumberOut True=
        Final AFROC approval joint integ preC.NumberOut True + 1:NEXT(4082$);

4557$    ASSIGN:    Final AFROC approval joint integ preC.NumberOut False=
        Final AFROC approval joint integ preC.NumberOut False + 1:NEXT(461$);

461$     ASSIGN:    Final AFROC resolution joint integ preC.NumberIn=
        Final AFROC resolution joint integ preC.NumberIn + 1:
        Final AFROC resolution joint integ preC.WIP=Final AFROC resolution joint integ
preC.WIP+1;
4559$    DELAY:     Triangular(42,48,60),,VA;
4606$    ASSIGN:    Final AFROC resolution joint integ preC.NumberOut=
        Final AFROC resolution joint integ preC.NumberOut + 1:
        Final AFROC resolution joint integ preC.WIP=Final AFROC resolution joint integ
preC.WIP-1
        :NEXT(4082$);
```

```
456$      BRANCH,     1:
                If,AFROC Count PreC==1,4609$,Yes:
                Else,4610$,Yes;
4609$     ASSIGN:     Check for previous path joint integ preC.NumberOut True=
                Check for previous path joint integ preC.NumberOut True + 1:NEXT(462$);

4610$     ASSIGN:     Check for previous path joint integ preC.NumberOut False=
                Check for previous path joint integ preC.NumberOut False + 1:NEXT(455$);

462$      ASSIGN:     Kill time at AFROC joint integ PreC=TNOW:
                TFIN=TNOW:NEXT(465$);

465$      TALLY:      Record 25,INT(SimTime),1:NEXT(454$);

454$      ASSIGN:     Death at AFROC joint integ preC.NumberOut=Death at AFROC joint integ
preC.NumberOut + 1;
4611$     DISPOSE:    Yes;

455$      ASSIGN:     AFROC Count PreC=1:NEXT(453$);

453$      BRANCH,     1:
                With,(99)/100,4612$,Yes:
                Else,4613$,Yes;
4612$     ASSIGN:     Dead activity joint integ preC.NumberOut True=Dead activity joint integ
preC.NumberOut True + 1
                :NEXT(462$);

4613$     ASSIGN:     Dead activity joint integ preC.NumberOut False=Dead activity joint integ
preC.NumberOut False + 1
                :NEXT(442$);

451$      ASSIGN:     Hold for a year later in process 2nd time joint integ preC.NumberIn=
                Hold for a year later in process 2nd time joint integ preC.NumberIn + 1:
                Hold for a year later in process 2nd time joint integ preC.WIP=
                Hold for a year later in process 2nd time joint integ preC.WIP+1;
4615$     DELAY:      Triangular(270,300,365),,NVA;
4662$     ASSIGN:     Hold for a year later in process 2nd time joint integ preC.NumberOut=
                Hold for a year later in process 2nd time joint integ preC.NumberOut + 1:
                Hold for a year later in process 2nd time joint integ preC.WIP=
                Hold for a year later in process 2nd time joint integ preC.WIP-1:NEXT(448$);

450$      ASSIGN:     Hold for a year later in process joint integ preC.NumberIn=
```

```
                Hold for a year later in process joint integ preC.NumberIn + 1:
                Hold for a year later in process joint integ preC.WIP=
                Hold for a year later in process joint integ preC.WIP+1;
4666$     DELAY:     Triangular(270,300,365),,NVA;
4713$     ASSIGN:    Hold for a year later in process joint integ preC.NumberOut=
                Hold for a year later in process joint integ preC.NumberOut + 1:
                Hold for a year later in process joint integ preC.WIP=
                Hold for a year later in process joint integ preC.WIP-1:NEXT(444$);

4082$     ASSIGN:    Joint Integration PreC.NumberOut=Joint Integration PreC.NumberOut + 1:
                Joint Integration PreC.WIP=Joint Integration PreC.WIP-1:NEXT(437$);



;
;
;    Model statements for module:  BasicProcess.Decide 152 (Check Condition PreC)
;
401$      BRANCH,    1:
                If,RequirementPathTrack>=1,4716$,Yes:
                Else,4717$,Yes;
4716$     ASSIGN:    Check Condition PreC.NumberOut True=Check Condition PreC.NumberOut True
+ 1:NEXT(669$);

4717$     ASSIGN:    Check Condition PreC.NumberOut False=Check Condition PreC.NumberOut False
+ 1:NEXT(400$);



;
;
;    Model statements for module:  BasicProcess.Record 13 (Record 13)
;
669$      TALLY:     Record 13,INT(SimTime),1:NEXT(390$);



;
;
;    Model statements for module:  BasicProcess.Assign 79 (end simulation PreC)
;
390$      ASSIGN:    Kill at Begin of requirements swimlane PreC=TNOW:
                TFIN=TNOW:NEXT(385$);
```

```
;
;
;    Model statements for module:  BasicProcess.Dispose 34 (End prior to start of Requirements
swimlane PreC)
;
385$         ASSIGN:       End prior to start of Requirements swimlane PreC.NumberOut=
                        End prior to start of Requirements swimlane PreC.NumberOut + 1;
4718$        DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Assign 81 (Add counter through feedback path PreC)
;
400$         ASSIGN:       RequirementPathTrackPreC=RequirementPathTrackPreC + 1:NEXT(399$);


;
;
;    Model statements for module:  BasicProcess.Decide 151 (Decision to Repursue PreC)
;
399$         BRANCH,       1:
                        With,(85)/100,4719$,Yes:
                        Else,4720$,Yes;
4719$        ASSIGN:       Decision to Repursue PreC.NumberOut True=Decision to Repursue
PreC.NumberOut True + 1:NEXT(402$);

4720$        ASSIGN:       Decision to Repursue PreC.NumberOut False=Decision to Repursue
PreC.NumberOut False + 1:NEXT(668$);


;
;
;    Model statements for module:  BasicProcess.Process 183 (Update Briefing Materials PreC)
;
402$         ASSIGN:       Update Briefing Materials PreC.NumberIn=Update Briefing Materials
PreC.NumberIn + 1:
                        Update Briefing Materials PreC.WIP=Update Briefing Materials PreC.WIP+1;
4722$        DELAY:        Triangular(10,35,40),,VA;
4769$        ASSIGN:       Update Briefing Materials PreC.NumberOut=Update Briefing Materials
PreC.NumberOut + 1:
                        Update Briefing Materials PreC.WIP=Update Briefing Materials PreC.WIP-1:NEXT(394$);
```

```
;
;
;    Model statements for module:  BasicProcess.Record 12 (Record 12)
;
668$         TALLY:        Record 12,INT(SimTime),1:NEXT(390$);


;
;
;    Model statements for module:  BasicProcess.Decide 147 (Check on conditions PreC)
;
389$         BRANCH,       1:
                      If,PreCpursuerequirements==1,4772$,Yes:
                      Else,4773$,Yes;
4772$        ASSIGN:       Check on conditions PreC.NumberOut True=Check on conditions
PreC.NumberOut True + 1:NEXT(667$);

4773$        ASSIGN:       Check on conditions PreC.NumberOut False=Check on conditions
PreC.NumberOut False + 1:NEXT(391$);


;
;
;    Model statements for module:  BasicProcess.Record 11 (Record 11)
;
667$         TALLY:        Record 11,INT(SimTime),1:NEXT(390$);


;
;
;    Model statements for module:  BasicProcess.Assign 80 (Set check on decision variable PreC)
;
391$         ASSIGN:       PreCpursuerequirements=1:NEXT(392$);


;
;
;    Model statements for module:  BasicProcess.Process 179 (Wait for more favorable conditions PreC)
;
392$         ASSIGN:       Wait for more favorable conditions PreC.NumberIn=
```

```
                Wait for more favorable conditions PreC.NumberIn + 1:
                Wait for more favorable conditions PreC.WIP=Wait for more favorable conditions
PreC.WIP+1;
4775$     DELAY:     Triangular(100,115,150),,VA;
4822$     ASSIGN:     Wait for more favorable conditions PreC.NumberOut=
                Wait for more favorable conditions PreC.NumberOut + 1:
                Wait for more favorable conditions PreC.WIP=Wait for more favorable conditions
PreC.WIP-1
                :NEXT(388$);


;
;
;    Model statements for module:  BasicProcess.Decide 207 (Timing of funds OK?)
;
574$     BRANCH,     1:
                With,(55)/100,4825$,Yes:
                Else,4826$,Yes;
4825$     ASSIGN:     Timing of funds OK?.NumberOut True=Timing of funds OK?.NumberOut True +
1:NEXT(501$);

4826$     ASSIGN:     Timing of funds OK?.NumberOut False=Timing of funds OK?.NumberOut False +
1:NEXT(575$);


;
;
;    Model statements for module:  BasicProcess.Process 229 (RFP Release and Source Selection PreC)
;
501$     ASSIGN:     RFP Release and Source Selection PreC.NumberIn=RFP Release and Source
Selection PreC.NumberIn + 1:
                RFP Release and Source Selection PreC.WIP=RFP Release and Source Selection
PreC.WIP+1;
4828$     DELAY:     Triangular(90,160,180),,VA;
4875$     ASSIGN:     RFP Release and Source Selection PreC.NumberOut=RFP Release and Source
Selection PreC.NumberOut + 1:
                RFP Release and Source Selection PreC.WIP=RFP Release and Source Selection
PreC.WIP-1:NEXT(502$);


;
;
```

```
;    Model statements for module:  BasicProcess.Decide 184 (Protest award PreC)
;
502$        BRANCH,       1:
                 With,(20)/100,4878$,Yes:
                 Else,4879$,Yes;
4878$       ASSIGN:       Protest award PreC.NumberOut True=Protest award PreC.NumberOut True +
1:NEXT(504$);

4879$       ASSIGN:       Protest award PreC.NumberOut False=Protest award PreC.NumberOut False +
1:NEXT(503$);



;
;
;    Model statements for module:  BasicProcess.Process 231 (Delay for Protest review PreC)
;
504$        ASSIGN:       Delay for Protest review PreC.NumberIn=Delay for Protest review PreC.NumberIn
+ 1:
                 Delay for Protest review PreC.WIP=Delay for Protest review PreC.WIP+1;
4881$       DELAY:        Triangular(30,50,60),,VA;
4928$       ASSIGN:       Delay for Protest review PreC.NumberOut=Delay for Protest review
PreC.NumberOut + 1:
                 Delay for Protest review PreC.WIP=Delay for Protest review PreC.WIP-1:NEXT(505$);



;
;
;    Model statements for module:  BasicProcess.Decide 185 (Protest upheld PreC)
;
505$        BRANCH,       1:
                 With,(40)/100,4931$,Yes:
                 Else,4932$,Yes;
4931$       ASSIGN:       Protest upheld PreC.NumberOut True=Protest upheld PreC.NumberOut True +
1:NEXT(501$);

4932$       ASSIGN:       Protest upheld PreC.NumberOut False=Protest upheld PreC.NumberOut False +
1:NEXT(503$);



;
;
```

```
;     Model statements for module:  BasicProcess.Process 230 (Scope and Award System Design and
Development Contracts)
;
503$         ASSIGN:       Scope and Award System Design and Development Contracts.NumberIn=
                        Scope and Award System Design and Development Contracts.NumberIn + 1:
                        Scope and Award System Design and Development Contracts.WIP=
                        Scope and Award System Design and Development Contracts.WIP+1;
4934$        DELAY:        Triangular(30,100,120),,VA;
4981$        ASSIGN:       Scope and Award System Design and Development Contracts.NumberOut=
                        Scope and Award System Design and Development Contracts.NumberOut + 1:
                        Scope and Award System Design and Development Contracts.WIP=
                        Scope and Award System Design and Development Contracts.WIP-1:NEXT(509$);


;
;
;     Model statements for module:  BasicProcess.Decide 186 (Path depends upon ACAT level PreC)
;
509$         BRANCH,       1:
                        If,ACAT Level==1,506$,Yes:
                        If,ACAT Level==2,507$,Yes:
                        Else,508$,Yes;

;
;
;     Model statements for module:  BasicProcess.Assign 93 (ACAT III Contract Length PreC)
;
508$         ASSIGN:       SDD contract cost=1:
                        SDD Contract Start=TNOW:
                        SDD original contract length=TRIA(365, 480, 2190):NEXT(567$);


;
;
;     Model statements for module:  BasicProcess.Assign 106 (Determine contract end date PreC)
;
567$         ASSIGN:       SDD contract length=SDD original contract length:
                        SDD Contract End Date=SDD Contract Start + SDD original contract length:NEXT(510$);


;
;
```

```
;     Model statements for module:  BasicProcess.Separate 22 (Split flow PreC)
;
510$        DUPLICATE,     100 - 0:
                 1,4988$,0:NEXT(4987$);

4987$       ASSIGN:       Split flow PreC.NumberOut Orig=Split flow PreC.NumberOut Orig +
1:NEXT(564$);

4988$       ASSIGN:       Split flow PreC.NumberOut Dup=Split flow PreC.NumberOut Dup +
1:NEXT(530$);


;
;
;     Model statements for module:  AdvancedProcess.Hold 15 (Wait for signal for Costing and Acquisition
Planning activities PreC)
;
564$        QUEUE,        Wait for signal for Costing and Acquisition Planning activities PreC.Queue;
        SCAN:         Acq Plan PreC==1:NEXT(563$);


;
;
;     Model statements for module:  BasicProcess.Separate 27 (Split into Acq Planning and Costing
Activities PreC)
;
563$        DUPLICATE,     100 - 0:
                 1,4991$,0:NEXT(4990$);

4990$       ASSIGN:       Split into Acq Planning and Costing Activities PreC.NumberOut Orig=
                 Split into Acq Planning and Costing Activities PreC.NumberOut Orig + 1:NEXT(542$);

4991$       ASSIGN:       Split into Acq Planning and Costing Activities PreC.NumberOut Dup=
                 Split into Acq Planning and Costing Activities PreC.NumberOut Dup + 1:NEXT(526$);


;
;
;     Model statements for module:  BasicProcess.Separate 24 (Split into costing activities PreC)
;
542$        DUPLICATE,     100 - 0:
                 1,4994$,0:NEXT(4993$);
```

```
4993$        ASSIGN:       Split into costing activities PreC.NumberOut Orig=
                       Split into costing activities PreC.NumberOut Orig + 1:NEXT(543$);

4994$        ASSIGN:       Split into costing activities PreC.NumberOut Dup=
                       Split into costing activities PreC.NumberOut Dup + 1:NEXT(544$);


;
;
;     Model statements for module:  BasicProcess.Separate 25 (Second split into costing activities PreC)
;
543$         DUPLICATE,     100 - 0:
                       1,4997$,0:NEXT(4996$);

4996$        ASSIGN:       Second split into costing activities PreC.NumberOut Orig=
                       Second split into costing activities PreC.NumberOut Orig + 1:NEXT(545$);

4997$        ASSIGN:       Second split into costing activities PreC.NumberOut Dup=
                       Second split into costing activities PreC.NumberOut Dup + 1:NEXT(546$);


;
;
;     Model statements for module:  BasicProcess.Process 247 (Contractor cost estimate PreC)
;
545$         ASSIGN:       Contractor cost estimate PreC.NumberIn=Contractor cost estimate
PreC.NumberIn + 1:
                       Contractor cost estimate PreC.WIP=Contractor cost estimate PreC.WIP+1;
4999$        DELAY:        Triangular(45,50,90),,VA;
5046$        ASSIGN:       Contractor cost estimate PreC.NumberOut=Contractor cost estimate
PreC.NumberOut + 1:
                       Contractor cost estimate PreC.WIP=Contractor cost estimate PreC.WIP-1:NEXT(547$);


;
;
;     Model statements for module:  BasicProcess.Batch 18 (for Affordability Assessment PreC)
;
547$         QUEUE,        for Affordability Assessment PreC.Queue;
5049$        GROUP,        ,Permanent:3,Last:NEXT(5050$);
```

```
5050$       ASSIGN:      for Affordability Assessment PreC.NumberOut=for Affordability Assessment
PreC.NumberOut + 1
                  :NEXT(548$);


;
;
;    Model statements for module:  BasicProcess.Process 249 (Affordability Assessment PreC)
;
548$        ASSIGN:      Affordability Assessment PreC.NumberIn=Affordability Assessment
PreC.NumberIn + 1:
                  Affordability Assessment PreC.WIP=Affordability Assessment PreC.WIP+1;
5052$       DELAY:       Triangular(120,160,180),,VA;
5099$       ASSIGN:      Affordability Assessment PreC.NumberOut=Affordability Assessment
PreC.NumberOut + 1:
                  Affordability Assessment PreC.WIP=Affordability Assessment PreC.WIP-1:NEXT(549$);


;
;
;    Model statements for module:  BasicProcess.Separate 26 (for funding check PreC)
;
549$        DUPLICATE,    100 - 0:
                  1,5104$,0:NEXT(5103$);

5103$       ASSIGN:      for funding check PreC.NumberOut Orig=for funding check PreC.NumberOut
Orig + 1:NEXT(485$);

5104$       ASSIGN:      for funding check PreC.NumberOut Dup=for funding check PreC.NumberOut
Dup + 1:NEXT(541$);


;
;
;    Model statements for module:  BasicProcess.Decide 179 (Fully funded to 80% ICE in FYDP? PreC)
;
485$        BRANCH,      1:
                  With,(90)/100,5105$,Yes:
                  Else,5106$,Yes;
5105$       ASSIGN:      Fully funded to 80% ICE in FYDP? PreC.NumberOut True=
                  Fully funded to 80% ICE in FYDP? PreC.NumberOut True + 1:NEXT(551$);
```

```
5106$      ASSIGN:     Fully funded to 80% ICE in FYDP? PreC.NumberOut False=
                 Fully funded to 80% ICE in FYDP? PreC.NumberOut False + 1:NEXT(488$);


;
;
;    Model statements for module:  AdvancedProcess.Hold 12 (KPPs arrive from Requirements PreC)
;
551$       QUEUE,      KPPs arrive from Requirements PreC.Queue;
        SCAN:       KPPs Ready PreC==1:NEXT(550$);


;
;
;    Model statements for module:  BasicProcess.Process 250 (Set Acquisition Program Baseline PreC)
;
550$       ASSIGN:     Set Acquisition Program Baseline PreC.NumberIn=Set Acquisition Program
Baseline PreC.NumberIn + 1:
                 Set Acquisition Program Baseline PreC.WIP=Set Acquisition Program Baseline
PreC.WIP+1;
5108$      DELAY:      Triangular(10,25,30),,VA;
5155$      ASSIGN:     Set Acquisition Program Baseline PreC.NumberOut=Set Acquisition Program
Baseline PreC.NumberOut + 1:
                 Set Acquisition Program Baseline PreC.WIP=Set Acquisition Program Baseline PreC.WIP-
1:NEXT(631$);


;
;
;    Model statements for module:  BasicProcess.Assign 128 (Notify PreC Baseline)
;
631$       ASSIGN:     PreC Baseline=1:NEXT(494$);


;
;
;    Model statements for module:  BasicProcess.Batch 16 (Complete predecessor activities preC)
;
494$       QUEUE,      Complete predecessor activities preC.Queue;
5158$      GROUP,      ,Permanent:2,Last:NEXT(5159$);
```

```
5159$        ASSIGN:       Complete predecessor activities preC.NumberOut=Complete predecessor
activities preC.NumberOut + 1
                         :NEXT(632$);



;
;
;    Model statements for module:  BasicProcess.Process 271 (Acquisition Panels preparation PreC)
;
632$         ASSIGN:       Acquisition Panels preparation PreC.NumberIn=Acquisition Panels preparation
PreC.NumberIn + 1:
                         Acquisition Panels preparation PreC.WIP=Acquisition Panels preparation PreC.WIP+1;
5161$        DELAY:        ACAT level==1*TRIA(40,56,60)+ACAT level==2*TRIA(15,25,30) + ACAT
level==3*TRIA(15,25,30),,VA;
5208$        ASSIGN:       Acquisition Panels preparation PreC.NumberOut=Acquisition Panels preparation
PreC.NumberOut + 1:
                         Acquisition Panels preparation PreC.WIP=Acquisition Panels preparation PreC.WIP-
1:NEXT(633$);



;
;
;    Model statements for module:  BasicProcess.Batch 20 (Wait for RFP Coord Process to end)
;
633$         QUEUE,        Wait for RFP Coord Process to end.Queue;
5211$        GROUP,        ,Permanent:2,Last:NEXT(5212$);

5212$        ASSIGN:       Wait for RFP Coord Process to end.NumberOut=Wait for RFP Coord Process to
end.NumberOut + 1
                         :NEXT(495$);



;
;
;    Model statements for module:  BasicProcess.Process 228 (Acquisition Panels PreC)
;
495$         ASSIGN:       Acquisition Panels PreC.NumberIn=Acquisition Panels PreC.NumberIn + 1:
                         Acquisition Panels PreC.WIP=Acquisition Panels PreC.WIP+1;
5214$        DELAY:        Triangular(15,30,35),,VA;
5261$        ASSIGN:       Acquisition Panels PreC.NumberOut=Acquisition Panels PreC.NumberOut + 1:
                         Acquisition Panels PreC.WIP=Acquisition Panels PreC.WIP-1:NEXT(553$);
```

```
;
;
;     Model statements for module:  BasicProcess.Decide 180 (ACAT level preC)
;
488$          BRANCH,        1:
                        If,ACAT Level==1,5264$,Yes:
                        Else,5265$,Yes;
5264$         ASSIGN:        ACAT level preC.NumberOut True=ACAT level preC.NumberOut True +
1:NEXT(486$);

5265$         ASSIGN:        ACAT level preC.NumberOut False=ACAT level preC.NumberOut False +
1:NEXT(487$);


;
;
;     Model statements for module:  BasicProcess.Process 221 (ACAT I time delay PreC)
;
486$          ASSIGN:        ACAT I time delay PreC.NumberIn=ACAT I time delay PreC.NumberIn + 1:
                        ACAT I time delay PreC.WIP=ACAT I time delay PreC.WIP+1;
5267$         DELAY:         Triangular(30,120,180),,VA;
5314$         ASSIGN:        ACAT I time delay PreC.NumberOut=ACAT I time delay PreC.NumberOut + 1:
                        ACAT I time delay PreC.WIP=ACAT I time delay PreC.WIP-1:NEXT(551$);


;
;
;     Model statements for module:  BasicProcess.Process 222 (ACAT II or ACAT III time delay PreC)
;
487$          ASSIGN:        ACAT II or ACAT III time delay PreC.NumberIn=ACAT II or ACAT III time delay
PreC.NumberIn + 1:
                        ACAT II or ACAT III time delay PreC.WIP=ACAT II or ACAT III time delay PreC.WIP+1;
5318$         DELAY:         Triangular(90,225,270),,VA;
5365$         ASSIGN:        ACAT II or ACAT III time delay PreC.NumberOut=ACAT II or ACAT III time delay
PreC.NumberOut + 1:
                        ACAT II or ACAT III time delay PreC.WIP=ACAT II or ACAT III time delay PreC.WIP-
1:NEXT(551$);


;
;
```

```
;     Model statements for module:  BasicProcess.Batch 17 (Bring the processes together PreC)
;
541$         QUEUE,        Bring the processes together PreC.Queue;
5368$        GROUP,        ,Permanent:2,Last:NEXT(5369$);

5369$        ASSIGN:       Bring the processes together PreC.NumberOut=Bring the processes together
PreC.NumberOut + 1
                           :NEXT(633$);



;
;
;     Model statements for module:  BasicProcess.Process 248 (Independent Cost Estimate PreC)
;
546$         ASSIGN:       Independent Cost Estimate PreC.NumberIn=Independent Cost Estimate
PreC.NumberIn + 1:
                           Independent Cost Estimate PreC.WIP=Independent Cost Estimate PreC.WIP+1;
5371$        DELAY:        Triangular(30,35,60),,VA;
5418$        ASSIGN:       Independent Cost Estimate PreC.NumberOut=Independent Cost Estimate
PreC.NumberOut + 1:
                           Independent Cost Estimate PreC.WIP=Independent Cost Estimate PreC.WIP-
1:NEXT(547$);



;
;
;     Model statements for module:  BasicProcess.Process 246 (Program Office Cost Estimate PreC)
;
544$         ASSIGN:       Program Office Cost Estimate PreC.NumberIn=Program Office Cost Estimate
PreC.NumberIn + 1:
                           Program Office Cost Estimate PreC.WIP=Program Office Cost Estimate PreC.WIP+1;
5422$        DELAY:        Triangular(60,65,90),,VA;
5469$        ASSIGN:       Program Office Cost Estimate PreC.NumberOut=Program Office Cost Estimate
PreC.NumberOut + 1:
                           Program Office Cost Estimate PreC.WIP=Program Office Cost Estimate PreC.WIP-
1:NEXT(547$);



;
;
;     Model statements for module:  BasicProcess.Process 234 (Acquisition Planning Activities PreC)
;
```

```
526$      ASSIGN:     Acquisition Planning Activities PreC.NumberIn=Acquisition Planning Activities
PreC.NumberIn + 1:
                  Acquisition Planning Activities PreC.WIP=Acquisition Planning Activities
PreC.WIP+1:NEXT(527$);

527$      BRANCH,     1:
                  If,ACAT Level==1,5523$,Yes:
                  Else,5524$,Yes;
5523$     ASSIGN:     Acq planning activities depend upon ACAT level preC.NumberOut True=
                  Acq planning activities depend upon ACAT level preC.NumberOut True + 1:NEXT(528$);

5524$     ASSIGN:     Acq planning activities depend upon ACAT level preC.NumberOut False=
                  Acq planning activities depend upon ACAT level preC.NumberOut False + 1:NEXT(529$);

528$      ASSIGN:     ACAT I Acquisition Planning PreC.NumberIn=ACAT I Acquisition Planning
PreC.NumberIn + 1:
                  ACAT I Acquisition Planning PreC.WIP=ACAT I Acquisition Planning PreC.WIP+1;
5526$     DELAY:      Triangular(120,240,250),,VA;
5573$     ASSIGN:     ACAT I Acquisition Planning PreC.NumberOut=ACAT I Acquisition Planning
PreC.NumberOut + 1:
                  ACAT I Acquisition Planning PreC.WIP=ACAT I Acquisition Planning PreC.WIP-
1:NEXT(5520$);

529$      ASSIGN:     ACAT II Or III Acquisition Planning PreC.NumberIn=
                  ACAT II Or III Acquisition Planning PreC.NumberIn + 1:
                  ACAT II Or III Acquisition Planning PreC.WIP=ACAT II Or III Acquisition Planning
PreC.WIP+1;
5577$     DELAY:      Triangular(120,185,250),,VA;
5624$     ASSIGN:     ACAT II Or III Acquisition Planning PreC.NumberOut=
                  ACAT II Or III Acquisition Planning PreC.NumberOut + 1:
                  ACAT II Or III Acquisition Planning PreC.WIP=ACAT II Or III Acquisition Planning
PreC.WIP-1
                  :NEXT(5520$);

5520$     ASSIGN:     Acquisition Planning Activities PreC.NumberOut=Acquisition Planning Activities
PreC.NumberOut + 1:
                  Acquisition Planning Activities PreC.WIP=Acquisition Planning Activities PreC.WIP-
1:NEXT(489$);


;
;
```

```
;     Model statements for module:  BasicProcess.Batch 15 (Processes come together PreC)
;
489$         QUEUE,        Processes come together PreC.Queue;
5627$        GROUP,        ,Permanent:2,Last:NEXT(5628$);

5628$        ASSIGN:       Processes come together PreC.NumberOut=Processes come together
PreC.NumberOut + 1:NEXT(490$);


;
;
;     Model statements for module:  BasicProcess.Process 223 (Draft RFP Preparation preC)
;
490$         ASSIGN:       Draft RFP Preparation preC.NumberIn=Draft RFP Preparation preC.NumberIn + 1:
                    Draft RFP Preparation preC.WIP=Draft RFP Preparation preC.WIP+1;
5630$        DELAY:        Triangular(10,17,20),,VA;
5677$        ASSIGN:       Draft RFP Preparation preC.NumberOut=Draft RFP Preparation preC.NumberOut
+ 1:
                    Draft RFP Preparation preC.WIP=Draft RFP Preparation preC.WIP-1:NEXT(491$);


;
;
;     Model statements for module:  BasicProcess.Separate 21 (Separate activities once preC)
;
491$         DUPLICATE,     100 - 0:
                    1,5682$,0:NEXT(5681$);

5681$        ASSIGN:       Separate activities once preC.NumberOut Orig=Separate activities once
preC.NumberOut Orig + 1
                    :NEXT(492$);

5682$        ASSIGN:       Separate activities once preC.NumberOut Dup=Separate activities once
preC.NumberOut Dup + 1
                    :NEXT(629$);


;
;
;     Model statements for module:  BasicProcess.Process 224 (RFP Coordination Process PreC)
;
```

```
492$      ASSIGN:     RFP Coordination Process PreC.NumberIn=RFP Coordination Process
PreC.NumberIn + 1:
                  RFP Coordination Process PreC.WIP=RFP Coordination Process PreC.WIP+1;
5684$     DELAY:      Triangular(25,45,50),,VA;
5731$     ASSIGN:     RFP Coordination Process PreC.NumberOut=RFP Coordination Process
PreC.NumberOut + 1:
                  RFP Coordination Process PreC.WIP=RFP Coordination Process PreC.WIP-1:NEXT(541$);


;
;
;    Model statements for module:  AdvancedProcess.Hold 20 (Wait for Baseline set PreC)
;
629$      QUEUE,      Wait for Baseline set PreC.Queue;
          SCAN:       PreC Baseline==1:NEXT(493$);


;
;
;    Model statements for module:  BasicProcess.Process 225 (Source selection plans preC)
;
493$      ASSIGN:     Source selection plans preC.NumberIn=Source selection plans preC.NumberIn +
1:
                  Source selection plans preC.WIP=Source selection plans preC.WIP+1;
5735$     DELAY:      Triangular(30,60,65),,VA;
5782$     ASSIGN:     Source selection plans preC.NumberOut=Source selection plans
preC.NumberOut + 1:
                  Source selection plans preC.WIP=Source selection plans preC.WIP-1:NEXT(494$);


;
;
;    Model statements for module:  BasicProcess.Process 237 (Contract Startup PreC)
;
530$      ASSIGN:     Contract Startup PreC.NumberIn=Contract Startup PreC.NumberIn + 1:
                  Contract Startup PreC.WIP=Contract Startup PreC.WIP+1;
5786$     DELAY:      Triangular(30,42,45),,VA;
5833$     ASSIGN:     Contract Startup PreC.NumberOut=Contract Startup PreC.NumberOut + 1:
                  Contract Startup PreC.WIP=Contract Startup PreC.WIP-1:NEXT(566$);


;
```

```
;
;    Model statements for module:  BasicProcess.Assign 105 (Set Contract Start variable PreC)
;
566$         ASSIGN:       Contract Start PreC=1:NEXT(557$);


;
;
;    Model statements for module:  AdvancedProcess.Hold 13 (Wait for PDR)
;
557$         QUEUE,        Wait for PDR.Queue;
           SCAN:         PDR==1:NEXT(581$);


;
;
;    Model statements for module:  BasicProcess.Decide 211 (PDR success??)
;
581$         BRANCH,       1:
                      With,(25)/100,5836$,Yes:
                      Else,5837$,Yes;
5836$        ASSIGN:       PDR success??.NumberOut True=PDR success??.NumberOut True +
1:NEXT(592$);

5837$        ASSIGN:       PDR success??.NumberOut False=PDR success??.NumberOut False +
1:NEXT(648$);


;
;
;    Model statements for module:  AdvancedProcess.Hold 19 (Wait for CDR)
;
592$         QUEUE,        Wait for CDR.Queue;
           SCAN:         CDR==1:NEXT(594$);


;
;
;    Model statements for module:  BasicProcess.Decide 215 (CDR success??)
;
594$         BRANCH,       1:
                      With,(70)/100,5838$,Yes:
```

```
                    Else,5839$,Yes;
5838$     ASSIGN:     CDR success??.NumberOut True=CDR success??.NumberOut True +
1:NEXT(602$);

5839$     ASSIGN:     CDR success??.NumberOut False=CDR success??.NumberOut False +
1:NEXT(650$);


;
;
;     Model statements for module:  BasicProcess.Process 260 (Preparation for Acqiusition Panels before
DRR)
;
602$      ASSIGN:     Preparation for Acqiusition Panels before DRR.NumberIn=
                    Preparation for Acqiusition Panels before DRR.NumberIn + 1:
                    Preparation for Acqiusition Panels before DRR.WIP=
                    Preparation for Acqiusition Panels before DRR.WIP+1;
5841$     DELAY:      Triangular(25,50,60),,VA;
5888$     ASSIGN:     Preparation for Acqiusition Panels before DRR.NumberOut=
                    Preparation for Acqiusition Panels before DRR.NumberOut + 1:
                    Preparation for Acqiusition Panels before DRR.WIP=
                    Preparation for Acqiusition Panels before DRR.WIP-1:NEXT(603$);


;
;
;     Model statements for module:  BasicProcess.Process 261 (Pre DRR Acquisition Panels)
;
603$      ASSIGN:     Pre DRR Acquisition Panels.NumberIn=Pre DRR Acquisition Panels.NumberIn + 1:
                    Pre DRR Acquisition Panels.WIP=Pre DRR Acquisition Panels.WIP+1;
5892$     DELAY:      Triangular(3,12,15),,VA;
5939$     ASSIGN:     Pre DRR Acquisition Panels.NumberOut=Pre DRR Acquisition Panels.NumberOut
+ 1:
                    Pre DRR Acquisition Panels.WIP=Pre DRR Acquisition Panels.WIP-1:NEXT(604$);


;
;
;     Model statements for module:  BasicProcess.Decide 219 (Design Readiness Review)
;
604$      BRANCH,     1:
                    With,(90)/100,5942$,Yes:
```

```
                    Else,5943$,Yes;
5942$       ASSIGN:     Design Readiness Review.NumberOut True=Design Readiness
Review.NumberOut True + 1:NEXT(622$);

5943$       ASSIGN:     Design Readiness Review.NumberOut False=Design Readiness
Review.NumberOut False + 1:NEXT(623$);


;
;
;     Model statements for module:  BasicProcess.Assign 124 (Notify Requirements about DRR success)
;
622$        ASSIGN:     DRR Success=1:NEXT(607$);


;
;
;     Model statements for module:  BasicProcess.Process 263 (Fabrication)
;
607$        ASSIGN:     Fabrication.NumberIn=Fabrication.NumberIn + 1:
                    Fabrication.WIP=Fabrication.WIP+1;
5945$       DELAY:
                    TRIA(.06*SDD original contract length, .1*SDD original contract length, .11*SDD original
contract length),,
                    VA;
5992$       ASSIGN:     Fabrication.NumberOut=Fabrication.NumberOut + 1:
                    Fabrication.WIP=Fabrication.WIP-1:NEXT(609$);


;
;
;     Model statements for module:  BasicProcess.Process 264 (Assembly)
;
609$        ASSIGN:     Assembly.NumberIn=Assembly.NumberIn + 1:
                    Assembly.WIP=Assembly.WIP+1;
5996$       DELAY:
                    TRIA(.06*SDD original contract length, .1*SDD original contract length, .11*SDD original
contract length),,
                    VA;
6043$       ASSIGN:     Assembly.NumberOut=Assembly.NumberOut + 1:
                    Assembly.WIP=Assembly.WIP-1:NEXT(610$);
```

```
;
;
;     Model statements for module:  BasicProcess.Process 265 (Integrated Testing)
;
610$         ASSIGN:       Integrated Testing.NumberIn=Integrated Testing.NumberIn + 1:
                         Integrated Testing.WIP=Integrated Testing.WIP+1;
6047$        DELAY:
                         TRIA(ACAT Level==1*0.15*SDD original contract length+ACAT Level==2*0.07*SDD
original contract length+ACAT Level==3*0.07*SDD original contract length,ACAT Level==1*0.25*SDD
original contract length+ACAT Level==2*0.1*SDD original contract length+ACAT Level==3*0.1*SDD
original contract length,ACAT Level==1*0.26*SDD original contract length+ACAT Level==2*0.11*SDD
original contract length+ACAT Level==3*0.11*SDD original contract length),,
                         VA;
6094$        ASSIGN:       Integrated Testing.NumberOut=Integrated Testing.NumberOut + 1:
                         Integrated Testing.WIP=Integrated Testing.WIP-1:NEXT(611$);


;
;
;     Model statements for module:  BasicProcess.Decide 220 (Test Readiness Review)
;
611$         BRANCH,       1:
                         With,(70)/100,6097$,Yes:
                         Else,6098$,Yes;
6097$        ASSIGN:       Test Readiness Review.NumberOut True=Test Readiness Review.NumberOut
True + 1:NEXT(615$);

6098$        ASSIGN:       Test Readiness Review.NumberOut False=Test Readiness Review.NumberOut
False + 1:NEXT(624$);


;
;
;     Model statements for module:  BasicProcess.Process 267 (Developmental system testing and Live
Fire test and Operational Assessment testing)
;
615$         ASSIGN:       Developmental system testing and Live Fire test and Operational Assessment
testing.NumberIn=
                         Developmental system testing and Live Fire test and Operational Assessment
testing.NumberIn + 1:
```

```
                    Developmental system testing and Live Fire test and Operational Assessment
testing.WIP=
                    Developmental system testing and Live Fire test and Operational Assessment
testing.WIP+1;
6100$       DELAY:
                    TRIA(ACAT Level==1*0.18*SDD original contract length+ACAT Level==2*0.1*SDD
original contract length+ACAT Level==3*0.1*SDD original contract length,ACAT Level==1*0.25*SDD
original contract length+ACAT Level==2*0.15*SDD original contract length+ACAT Level==3*0.15*SDD
original contract length,ACAT Level==1*0.27*SDD original contract length+ACAT Level==2*0.17*SDD
original contract length+ACAT Level==3*0.17*SDD original contract length),,
                    VA;
6147$       ASSIGN:      Developmental system testing and Live Fire test and Operational Assessment
testing.NumberOut=
                    Developmental system testing and Live Fire test and Operational Assessment
testing.NumberOut + 1:
                    Developmental system testing and Live Fire test and Operational Assessment
testing.WIP=
                    Developmental system testing and Live Fire test and Operational Assessment
testing.WIP-1:NEXT(616$);


;
;
;     Model statements for module:  BasicProcess.Decide 221 (Make Trades?)
;
616$        BRANCH,      1:
                    With,(50)/100,6150$,Yes:
                    Else,6151$,Yes;
6150$       ASSIGN:      Make Trades?.NumberOut True=Make Trades?.NumberOut True +
1:NEXT(621$);

6151$       ASSIGN:      Make Trades?.NumberOut False=Make Trades?.NumberOut False +
1:NEXT(620$);


;
;
;     Model statements for module:  BasicProcess.Process 269 (Combined Testing)
;
621$        ASSIGN:      Combined Testing.NumberIn=Combined Testing.NumberIn + 1:
                    Combined Testing.WIP=Combined Testing.WIP+1;
6153$       DELAY:
```

```
                TRIA(.07*SDD original contract length, 0.1*SDD original contract length, 0.11*SDD
original contract length),,
                VA;
6200$     ASSIGN:     Combined Testing.NumberOut=Combined Testing.NumberOut + 1:
                Combined Testing.WIP=Combined Testing.WIP-1:NEXT(651$);



;
;
;     Model statements for module:  BasicProcess.Assign 145 (Assign Set close to end SDD contract
condition)
;
651$      ASSIGN:     SDD Contract condition end is close=1:NEXT(538$);



;
;
;     Model statements for module:  BasicProcess.Decide 204 (System Verification Review)
;
538$      BRANCH,     1:
                With,(85)/100,6203$,Yes:
                Else,6204$,Yes;
6203$     ASSIGN:     System Verification Review.NumberOut True=System Verification
Review.NumberOut True + 1:NEXT(540$);

6204$     ASSIGN:     System Verification Review.NumberOut False=System Verification
Review.NumberOut False + 1
                :NEXT(626$);



;
;
;     Model statements for module:  BasicProcess.Assign 102 (Engineering Development model delivery)
;
540$      ASSIGN:     End SDD contract=1:
                SDD Final contract length=SDD contract length:
                Engineering Development model=TNOW:NEXT(627$);



;
;
;     Model statements for module:  BasicProcess.Process 270 (Initial Rate Production Baseline)
```

```
;
627$        ASSIGN:      Initial Rate Production Baseline.NumberIn=Initial Rate Production
Baseline.NumberIn + 1:
                  Initial Rate Production Baseline.WIP=Initial Rate Production Baseline.WIP+1;
6206$       DELAY:       Triangular(15,30,35),,VA;
6253$       ASSIGN:      Initial Rate Production Baseline.NumberOut=Initial Rate Production
Baseline.NumberOut + 1:
                  Initial Rate Production Baseline.WIP=Initial Rate Production Baseline.WIP-1:NEXT(489$);


;
;
;     Model statements for module:  BasicProcess.Assign 126 (Set SVR rework)
;
626$        ASSIGN:      SVR rework=TRIA(30,160,180):NEXT(539$);


;
;
;     Model statements for module:  BasicProcess.Process 245 (SVR rework and delay)
;
539$        ASSIGN:      SVR rework and delay.NumberIn=SVR rework and delay.NumberIn + 1:
                  SVR rework and delay.WIP=SVR rework and delay.WIP+1;
6257$       DELAY:       SVR rework,,VA;
6304$       ASSIGN:      SVR rework and delay.NumberOut=SVR rework and delay.NumberOut + 1:
                  SVR rework and delay.WIP=SVR rework and delay.WIP-1:NEXT(625$);


;
;
;     Model statements for module:  BasicProcess.Assign 125 (Set SVR delay cost and schedule penalties)
;
625$        ASSIGN:      SDD contract length=SDD contract length + SVR rework:
                  SDD Contract End Date=SDD Contract End Date + SVR Rework:
                  SDD contract cost=SDD contract cost + (.05*SDD contract cost):NEXT(616$);


;
;
;     Model statements for module:  BasicProcess.Decide 222 (Check looping condition)
;
620$        BRANCH,      1:
```

```
                    If,trade counter==0,6307$,Yes:
                    Else,6308$,Yes;
6307$     ASSIGN:     Check looping condition.NumberOut True=Check looping condition.NumberOut
True + 1:NEXT(617$);

6308$     ASSIGN:     Check looping condition.NumberOut False=Check looping condition.NumberOut
False + 1:NEXT(621$);


;
;
;    Model statements for module:  BasicProcess.Assign 122 (Determine trades delay)
;
617$     ASSIGN:     Trades Delay=TRIA(30,60,180):NEXT(618$);


;
;
;    Model statements for module:  BasicProcess.Process 268 (Trades Delay PreC)
;
618$     ASSIGN:     Trades Delay PreC.NumberIn=Trades Delay PreC.NumberIn + 1:
                    Trades Delay PreC.WIP=Trades Delay PreC.WIP+1;
6310$    DELAY:      Trades Delay,,VA;
6357$    ASSIGN:     Trades Delay PreC.NumberOut=Trades Delay PreC.NumberOut + 1:
                    Trades Delay PreC.WIP=Trades Delay PreC.WIP-1:NEXT(619$);


;
;
;    Model statements for module:  BasicProcess.Assign 123 (Determine cost and schedule penalties for
trades delays)
;
619$     ASSIGN:     trade counter=1:
                    SDD contract length=SDD contract length + Trades Delay:
                    SDD Contract End Date=SDD Contract End Date + Trades Delay:
                    SDD contract cost=SDD contract cost + (0.02*SDD contract cost):NEXT(615$);


;
;
;    Model statements for module:  BasicProcess.Decide 224 (Check TRR looping condition)
;
```

```
624$         BRANCH,        1:
                        If,TRR loop==0,6360$,Yes:
                        Else,6361$,Yes;
6360$        ASSIGN:        Check TRR looping condition.NumberOut True=Check TRR looping
condition.NumberOut True + 1
                        :NEXT(612$);

6361$        ASSIGN:        Check TRR looping condition.NumberOut False=Check TRR looping
condition.NumberOut False + 1
                        :NEXT(615$);


;
;
;     Model statements for module:  BasicProcess.Assign 120 (Determine TRR delay)
;
612$         ASSIGN:        TRR Delay=TRIA(30,60,180):NEXT(613$);


;
;
;     Model statements for module:  BasicProcess.Process 266 (TRR Delay PreC)
;
613$         ASSIGN:        TRR Delay PreC.NumberIn=TRR Delay PreC.NumberIn + 1:
                        TRR Delay PreC.WIP=TRR Delay PreC.WIP+1;
6363$        DELAY:         TRR Delay,,VA;
6410$        ASSIGN:        TRR Delay PreC.NumberOut=TRR Delay PreC.NumberOut + 1:
                        TRR Delay PreC.WIP=TRR Delay PreC.WIP-1:NEXT(614$);


;
;
;     Model statements for module:  BasicProcess.Assign 121 (Determine cost and schedule penalties for
TRR delays)
;
614$         ASSIGN:        TRR loop=1:
                        SDD contract length=SDD contract length + TRR Delay:
                        SDD Contract End Date=SDD Contract End Date + TRR Delay:
                        SDD contract cost=SDD contract cost + (0.01*SDD contract cost):NEXT(611$);


;
```

```
;
;     Model statements for module:  BasicProcess.Decide 223 (Check DRR looping condition)
;
623$          BRANCH,        1:
                        If,DRR loop==0,6413$,Yes:
                        Else,6414$,Yes;
6413$         ASSIGN:        Check DRR looping condition.NumberOut True=Check DRR looping
condition.NumberOut True + 1
                        :NEXT(606$);

6414$         ASSIGN:        Check DRR looping condition.NumberOut False=Check DRR looping
condition.NumberOut False + 1
                        :NEXT(622$);



;
;
;     Model statements for module:  BasicProcess.Assign 118 (Determine DRR Rework)
;
606$          ASSIGN:        DRR Rework=TRIA(30,150,180):NEXT(605$);



;
;
;     Model statements for module:  BasicProcess.Process 262 (DRR rework and delay)
;
605$          ASSIGN:        DRR rework and delay.NumberIn=DRR rework and delay.NumberIn + 1:
                        DRR rework and delay.WIP=DRR rework and delay.WIP+1;
6416$         DELAY:         DRR Rework,,VA;
6463$         ASSIGN:        DRR rework and delay.NumberOut=DRR rework and delay.NumberOut + 1:
                        DRR rework and delay.WIP=DRR rework and delay.WIP-1:NEXT(608$);



;
;
;     Model statements for module:  BasicProcess.Assign 119 (Assign cost penalty for DRR rework)
;
608$          ASSIGN:        DRR loop=1:
                        SDD contract cost=SDD contract cost +(.01*SDD contract cost):
                        SDD contract length=SDD contract length + DRR Rework:
                        SDD Contract End Date=SDD Contract End Date + DRR Rework:NEXT(604$);
```

```
;
;
;    Model statements for module:  BasicProcess.Assign 144 (Assign CDR Rework time)
;
650$        ASSIGN:       CDR Rework time=.15*(TNOW-SDD contract length ):NEXT(595$);


;
;
;    Model statements for module:  BasicProcess.Process 257 (CDR Rework PreC)
;
595$        ASSIGN:       CDR Rework PreC.NumberIn=CDR Rework PreC.NumberIn + 1:
                  CDR Rework PreC.WIP=CDR Rework PreC.WIP+1;
6467$       DELAY:        CDR Rework time,,VA;
6514$       ASSIGN:       CDR Rework PreC.NumberOut=CDR Rework PreC.NumberOut + 1:
                  CDR Rework PreC.WIP=CDR Rework PreC.WIP-1:NEXT(596$);


;
;
;    Model statements for module:  BasicProcess.Assign 115 (Assign CDR1 Cost and Schedule Penalty)
;
596$        ASSIGN:       SDD contract length=SDD contract length + CDR Rework time:
                  SDD Contract End Date=SDD Contract End Date + PDR Rework time:
                  SDD contract cost=SDD contract cost + (.1*SDD contract cost):NEXT(597$);


;
;
;    Model statements for module:  BasicProcess.Decide 216 (CDR 2)
;
597$        BRANCH,       1:
                  With,(90)/100,6517$,Yes:
                  Else,6518$,Yes;
6517$       ASSIGN:       CDR 2.NumberOut True=CDR 2.NumberOut True + 1:NEXT(602$);

6518$       ASSIGN:       CDR 2.NumberOut False=CDR 2.NumberOut False + 1:NEXT(598$);


;
;
```

```
;     Model statements for module:  BasicProcess.Process 258 (CDR delay 2 PreC)
;
598$        ASSIGN:     CDR delay 2 PreC.NumberIn=CDR delay 2 PreC.NumberIn + 1:
                  CDR delay 2 PreC.WIP=CDR delay 2 PreC.WIP+1;
6520$       DELAY:      .5*CDR Rework time,,VA;
6567$       ASSIGN:     CDR delay 2 PreC.NumberOut=CDR delay 2 PreC.NumberOut + 1:
                  CDR delay 2 PreC.WIP=CDR delay 2 PreC.WIP-1:NEXT(599$);


;
;
;     Model statements for module:  BasicProcess.Assign 116 (Assign CDR2 Cost and Schedule Penalty)
;
599$        ASSIGN:     SDD contract length=SDD contract length + (0.5*CDR Rework time):
                  SDD Contract End Date=SDD Contract End Date + (0.5*PDR Rework time):
                  SDD contract cost=SDD contract cost + (.1*SDD contract cost):NEXT(600$);


;
;
;     Model statements for module:  BasicProcess.Decide 217 (CDR 3)
;
600$        BRANCH,      1:
                  With,(99)/100,6570$,Yes:
                  Else,6571$,Yes;
6570$       ASSIGN:     CDR 3.NumberOut True=CDR 3.NumberOut True + 1:NEXT(602$);

6571$       ASSIGN:     CDR 3.NumberOut False=CDR 3.NumberOut False + 1:NEXT(640$);


;
;
;     Model statements for module:  BasicProcess.Assign 136 (Assign Program Kill at CDR)
;
640$        ASSIGN:     TFIN=TNOW:
                  Program Kill Time at CDR=TNOW:NEXT(673$);


;
;
;     Model statements for module:  BasicProcess.Record 17 (Record 17)
;
```

```
673$        TALLY:        Record 17,INT(SimTime),1:NEXT(601$);


;
;
;    Model statements for module:  BasicProcess.Dispose 48 (Program Kill at CDR)
;
601$        ASSIGN:       Program Kill at CDR.NumberOut=Program Kill at CDR.NumberOut + 1;
6572$       DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Assign 142 (Assign PDR1 rework time)
;
648$        ASSIGN:       PDR rework=.15*(TNOW-SDD Contract Start):NEXT(582$);


;
;
;    Model statements for module:  BasicProcess.Process 254 (PDR Rework PreC)
;
582$        ASSIGN:       PDR Rework PreC.NumberIn=PDR Rework PreC.NumberIn + 1:
                     PDR Rework PreC.WIP=PDR Rework PreC.WIP+1;
6574$       DELAY:        PDR rework,,VA;
6621$       ASSIGN:       PDR Rework PreC.NumberOut=PDR Rework PreC.NumberOut + 1:
                     PDR Rework PreC.WIP=PDR Rework PreC.WIP-1:NEXT(583$);


;
;
;    Model statements for module:  BasicProcess.Assign 112 (Assign PDR1 Cost and Schedule Penalty)
;
583$        ASSIGN:       SDD contract length=SDD contract length + PDR Rework:
                     SDD Contract End Date=SDD Contract End Date + PDR Rework:
                     SDD contract cost=SDD contract cost + (.1*SDD contract cost):NEXT(584$);


;
;
;    Model statements for module:  BasicProcess.Decide 212 (PDR 2)
;
```

```
584$        BRANCH,       1:
                    With,(50)/100,6624$,Yes:
                    Else,6625$,Yes;
6624$       ASSIGN:       PDR 2.NumberOut True=PDR 2.NumberOut True + 1:NEXT(592$);

6625$       ASSIGN:       PDR 2.NumberOut False=PDR 2.NumberOut False + 1:NEXT(649$);


;
;
;    Model statements for module:  BasicProcess.Assign 143 (Assign PDR2 rework)
;
649$        ASSIGN:       PDR rework=.5*PDR Rework:NEXT(585$);


;
;
;    Model statements for module:  BasicProcess.Process 255 (PDR delay 2 PreC)
;
585$        ASSIGN:       PDR delay 2 PreC.NumberIn=PDR delay 2 PreC.NumberIn + 1:
                    PDR delay 2 PreC.WIP=PDR delay 2 PreC.WIP+1;
6627$       DELAY:        PDR Rework,,VA;
6674$       ASSIGN:       PDR delay 2 PreC.NumberOut=PDR delay 2 PreC.NumberOut + 1:
                    PDR delay 2 PreC.WIP=PDR delay 2 PreC.WIP-1:NEXT(586$);


;
;
;    Model statements for module:  BasicProcess.Assign 113 (Assign PDR2 Cost and Schedule Penalty)
;
586$        ASSIGN:       SDD contract length=SDD contract length + PDR Rework:
                    SDD Contract End Date=SDD Contract End Date + PDR Rework:
                    SDD contract cost=SDD contract cost + (.1*SDD contract cost):NEXT(587$);


;
;
;    Model statements for module:  BasicProcess.Decide 213 (PDR 3)
;
587$        BRANCH,       1:
                    With,(90)/100,6677$,Yes:
                    Else,6678$,Yes;
```

```
6677$       ASSIGN:      PDR 3.NumberOut True=PDR 3.NumberOut True + 1:NEXT(592$);

6678$       ASSIGN:      PDR 3.NumberOut False=PDR 3.NumberOut False + 1:NEXT(588$);


;
;
;    Model statements for module:  BasicProcess.Process 256 (PDR delay 3 PreC)
;
588$        ASSIGN:      PDR delay 3 PreC.NumberIn=PDR delay 3 PreC.NumberIn + 1:
                  PDR delay 3 PreC.WIP=PDR delay 3 PreC.WIP+1;
6680$       DELAY:       PDR Rework,,VA;
6727$       ASSIGN:      PDR delay 3 PreC.NumberOut=PDR delay 3 PreC.NumberOut + 1:
                  PDR delay 3 PreC.WIP=PDR delay 3 PreC.WIP-1:NEXT(591$);


;
;
;    Model statements for module:  BasicProcess.Assign 114 (Assign PDR3 Cost and Schedule Penalty)
;
591$        ASSIGN:      SDD contract length=SDD contract length + PDR Rework:
                  SDD Contract End Date=SDD Contract End Date + PDR Rework:
                  SDD contract cost=SDD contract cost + (.1*SDD contract cost):NEXT(589$);


;
;
;    Model statements for module:  BasicProcess.Decide 214 (Final PDR)
;
589$        BRANCH,      1:
                  With,(99)/100,6730$,Yes:
                  Else,6731$,Yes;
6730$       ASSIGN:      Final PDR.NumberOut True=Final PDR.NumberOut True + 1:NEXT(592$);

6731$       ASSIGN:      Final PDR.NumberOut False=Final PDR.NumberOut False + 1:NEXT(639$);


;
;
;    Model statements for module:  BasicProcess.Assign 135 (Assign program kill at PDR)
;
639$        ASSIGN:      TFIN=TNOW:
```

```
                    Program Kill time at PDR=TNOW:NEXT(672$);


;
;
;    Model statements for module:  BasicProcess.Record 16 (Record 16)
;
672$         TALLY:        Record 16,INT(SimTime),1:NEXT(590$);


;
;
;    Model statements for module:  BasicProcess.Dispose 47 (Program Kill at PDR)
;
590$         ASSIGN:       Program Kill at PDR.NumberOut=Program Kill at PDR.NumberOut + 1;
6732$        DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Assign 91 (ACAT I Contract Length PreC)
;
506$         ASSIGN:       SDD Contract Start=TNOW:
                    SDD contract cost=1:
                    SDD original contract length=TRIA(365, 1980, 2190):NEXT(567$);


;
;
;    Model statements for module:  BasicProcess.Assign 92 (ACAT II Contract Length PreC)
;
507$         ASSIGN:       SDD contract cost=1:
                    SDD Contract Start=TNOW:
                    SDD original contract length=TRIA(365,1365,2190):NEXT(567$);


;
;
;    Model statements for module:  BasicProcess.Process 252 (Delay to Align Funds PreC)
;
575$         ASSIGN:       Delay to Align Funds PreC.NumberIn=Delay to Align Funds PreC.NumberIn + 1:
                    Delay to Align Funds PreC.WIP=Delay to Align Funds PreC.WIP+1;
```

```
6734$       DELAY:       Triangular(30,35,75),,VA;
6781$       ASSIGN:      Delay to Align Funds PreC.NumberOut=Delay to Align Funds PreC.NumberOut +
1:
                  Delay to Align Funds PreC.WIP=Delay to Align Funds PreC.WIP-1:NEXT(501$);


;
;
;    Model statements for module:  BasicProcess.Decide 113 (Check for previous MDA decision attempt
preB)
;
280$        BRANCH,      1:
                  If,MS B approval attempt==1,6784$,Yes:
                  Else,6785$,Yes;
6784$       ASSIGN:      Check for previous MDA decision attempt preB.NumberOut True=
                  Check for previous MDA decision attempt preB.NumberOut True + 1:NEXT(360$);

6785$       ASSIGN:      Check for previous MDA decision attempt preB.NumberOut False=
                  Check for previous MDA decision attempt preB.NumberOut False + 1:NEXT(282$);


;
;
;    Model statements for module:  BasicProcess.Assign 66 (End Simulation PreB 4)
;
360$        ASSIGN:      Kill time at MS B decision=TNOW:
                  TFIN=TNOW:NEXT(664$);


;
;
;    Model statements for module:  BasicProcess.Record 8 (Record 8)
;
664$        TALLY:       Record 8,INT(SimTime),1:NEXT(281$);


;
;
;    Model statements for module:  BasicProcess.Dispose 23 (Kill at MS B decision)
;
281$        ASSIGN:      Kill at MS B decision.NumberOut=Kill at MS B decision.NumberOut + 1;
6786$       DISPOSE:     No;
```

```
;
;
;    Model statements for module:  BasicProcess.Assign 37 (Assign counter to MDA loop preB)
;
282$         ASSIGN:       MS B approval attempt=1:NEXT(635$);


;
;
;    Model statements for module:  BasicProcess.Process 273 (Delay to repeat required steps PreB)
;
635$         ASSIGN:       Delay to repeat required steps PreB.NumberIn=Delay to repeat required steps
PreB.NumberIn + 1:
                      Delay to repeat required steps PreB.WIP=Delay to repeat required steps PreB.WIP+1;
6788$        DELAY:        Triangular(60,120,180),,VA;
6835$        ASSIGN:       Delay to repeat required steps PreB.NumberOut=Delay to repeat required steps
PreB.NumberOut + 1:
                      Delay to repeat required steps PreB.WIP=Delay to repeat required steps PreB.WIP-
1:NEXT(279$);


;
;
;    Model statements for module:  BasicProcess.Process 120 (Independent document preB)
;
248$         ASSIGN:       Independent document preB.NumberIn=Independent document preB.NumberIn
+ 1:
                      Independent document preB.WIP=Independent document preB.WIP+1:NEXT(249$);

249$         ASSIGN:       Draft document indep preB.NumberIn=Draft document indep preB.NumberIn +
1:
                      Draft document indep preB.WIP=Draft document indep preB.WIP+1;
6890$        DELAY:        Triangular(30,55,60),,VA;
6937$        ASSIGN:       Draft document indep preB.NumberOut=Draft document indep
preB.NumberOut + 1:
                      Draft document indep preB.WIP=Draft document indep preB.WIP-1:NEXT(250$);

250$         ASSIGN:       Air staff process indep preB.NumberIn=Air staff process indep preB.NumberIn +
1:
                      Air staff process indep preB.WIP=Air staff process indep preB.WIP+1;
```

```
6941$      DELAY:      Triangular(21,29,42),,VA;
6988$      ASSIGN:      Air staff process indep preB.NumberOut=Air staff process indep
preB.NumberOut + 1:
                 Air staff process indep preB.WIP=Air staff process indep preB.WIP-1:NEXT(251$);

251$       BRANCH,      1:
                 With,(95)/100,6991$,Yes:
                 Else,6992$,Yes;
6991$      ASSIGN:      Critical comments indep preB.NumberOut True=Critical comments indep
preB.NumberOut True + 1
                 :NEXT(252$);

6992$      ASSIGN:      Critical comments indep preB.NumberOut False=Critical comments indep
preB.NumberOut False + 1
                 :NEXT(255$);

252$       ASSIGN:      comment resolution indep preB.NumberIn=comment resolution indep
preB.NumberIn + 1:
                 comment resolution indep preB.WIP=comment resolution indep preB.WIP+1;
6994$      DELAY:      Triangular(15,30,45),,VA;
7041$      ASSIGN:      comment resolution indep preB.NumberOut=comment resolution indep
preB.NumberOut + 1:
                 comment resolution indep preB.WIP=comment resolution indep preB.WIP-
1:NEXT(253$);

253$       BRANCH,      1:
                 With,(99)/100,7044$,Yes:
                 Else,7045$,Yes;
7044$      ASSIGN:      MAJCOM approval indep preB.NumberOut True=MAJCOM approval indep
preB.NumberOut True + 1:NEXT(255$);

7045$      ASSIGN:      MAJCOM approval indep preB.NumberOut False=MAJCOM approval indep
preB.NumberOut False + 1
                 :NEXT(254$);

255$       ASSIGN:      AFROC Preparations indep preB.NumberIn=AFROC Preparations indep
preB.NumberIn + 1:
                 AFROC Preparations indep preB.WIP=AFROC Preparations indep preB.WIP+1;
7047$      DELAY:      Triangular(30,45,60),,VA;
7094$      ASSIGN:      AFROC Preparations indep preB.NumberOut=AFROC Preparations indep
preB.NumberOut + 1:
```

```
                    AFROC Preparations indep preB.WIP=AFROC Preparations indep preB.WIP-
1:NEXT(256$);

256$        BRANCH,       1:
                    With,(90)/100,7097$,Yes:
                    Else,7098$,Yes;
7097$       ASSIGN:       AFROC decision indep preB.NumberOut True=AFROC decision indep
preB.NumberOut True + 1:NEXT(261$);

7098$       ASSIGN:       AFROC decision indep preB.NumberOut False=AFROC decision indep
preB.NumberOut False + 1:NEXT(260$);

261$        BRANCH,       1:
                    With,(25)/100,7099$,Yes:
                    Else,7100$,Yes;
7099$       ASSIGN:       Post AFROC actions indep preB.NumberOut True=Post AFROC actions indep
preB.NumberOut True + 1
                    :NEXT(262$);

7100$       ASSIGN:       Post AFROC actions indep preB.NumberOut False=Post AFROC actions indep
preB.NumberOut False + 1
                    :NEXT(6886$);

262$        ASSIGN:       Accomplish Post AFROC actions indep preB.NumberIn=
                    Accomplish Post AFROC actions indep preB.NumberIn + 1:
                    Accomplish Post AFROC actions indep preB.WIP=Accomplish Post AFROC actions indep
preB.WIP+1;
7102$       DELAY:        Triangular(1,11,15),,VA;
7149$       ASSIGN:       Accomplish Post AFROC actions indep preB.NumberOut=
                    Accomplish Post AFROC actions indep preB.NumberOut + 1:
                    Accomplish Post AFROC actions indep preB.WIP=Accomplish Post AFROC actions indep
preB.WIP-1
                    :NEXT(6886$);

260$        BRANCH,       1:
                    If,AFROC Count PreB==1,7152$,Yes:
                    Else,7153$,Yes;
7152$       ASSIGN:       Check for previous path indep preB.NumberOut True=
                    Check for previous path indep preB.NumberOut True + 1:NEXT(263$);

7153$       ASSIGN:       Check for previous path indep preB.NumberOut False=
                    Check for previous path indep preB.NumberOut False + 1:NEXT(259$);
```

```
263$        ASSIGN:       Kill time at AFROC indep PreB=TNOW:
                    TFIN=TNOW:NEXT(264$);

264$        TALLY:        Record 23,INT(SimTime),1:NEXT(258$);

258$        ASSIGN:       Death at AFROC indep preB.NumberOut=Death at AFROC indep preB.NumberOut
+ 1;
7154$       DISPOSE:      Yes;

259$        ASSIGN:       AFROC Count PreB=1:NEXT(257$);

257$        BRANCH,       1:
                    With,(99)/100,7155$,Yes:
                    Else,7156$,Yes;
7155$       ASSIGN:       Dead activity indep preB.NumberOut True=Dead activity indep preB.NumberOut
True + 1:NEXT(263$);

7156$       ASSIGN:       Dead activity indep preB.NumberOut False=Dead activity indep
preB.NumberOut False + 1:NEXT(252$);

254$        ASSIGN:       Hold for a year later in process indep preB.NumberIn=
                    Hold for a year later in process indep preB.NumberIn + 1:
                    Hold for a year later in process indep preB.WIP=Hold for a year later in process indep
preB.WIP+1;
7158$       DELAY:        Triangular(270,300,365),,NVA;
7205$       ASSIGN:       Hold for a year later in process indep preB.NumberOut=
                    Hold for a year later in process indep preB.NumberOut + 1:
                    Hold for a year later in process indep preB.WIP=Hold for a year later in process indep
preB.WIP-1
                    :NEXT(255$);

6886$       ASSIGN:       Independent document preB.NumberOut=Independent document
preB.NumberOut + 1:
                    Independent document preB.WIP=Independent document preB.WIP-1:NEXT(221$);



;
;
;    Model statements for module:  BasicProcess.Process 107 (Joint Integration PreB)
;
222$        ASSIGN:       Joint Integration PreB.NumberIn=Joint Integration PreB.NumberIn + 1:
```

```
                    Joint Integration PreB.WIP=Joint Integration PreB.WIP+1:NEXT(223$);

223$        ASSIGN:       Draft document joint integ preB.NumberIn=Draft document joint integ
preB.NumberIn + 1:
                    Draft document joint integ preB.WIP=Draft document joint integ preB.WIP+1;
7260$       DELAY:        Triangular(30,55,60),,VA;
7307$       ASSIGN:       Draft document joint integ preB.NumberOut=Draft document joint integ
preB.NumberOut + 1:
                    Draft document joint integ preB.WIP=Draft document joint integ preB.WIP-
1:NEXT(224$);

224$        ASSIGN:       Air staff process joint integ preB.NumberIn=Air staff process joint integ
preB.NumberIn + 1:
                    Air staff process joint integ preB.WIP=Air staff process joint integ preB.WIP+1;
7311$       DELAY:        Triangular(21,29,42),,VA;
7358$       ASSIGN:       Air staff process joint integ preB.NumberOut=Air staff process joint integ
preB.NumberOut + 1:
                    Air staff process joint integ preB.WIP=Air staff process joint integ preB.WIP-
1:NEXT(225$);

225$        BRANCH,       1:
                    With,(95)/100,7361$,Yes:
                    Else,7362$,Yes;
7361$       ASSIGN:       Critical comments joint integ preB.NumberOut True=
                    Critical comments joint integ preB.NumberOut True + 1:NEXT(226$);

7362$       ASSIGN:       Critical comments joint integ preB.NumberOut False=
                    Critical comments joint integ preB.NumberOut False + 1:NEXT(228$);

226$        ASSIGN:       comment resolution joint integ preB.NumberIn=comment resolution joint integ
preB.NumberIn + 1:
                    comment resolution joint integ preB.WIP=comment resolution joint integ preB.WIP+1;
7364$       DELAY:        Triangular(15,30,45),,VA;
7411$       ASSIGN:       comment resolution joint integ preB.NumberOut=comment resolution joint
integ preB.NumberOut + 1:
                    comment resolution joint integ preB.WIP=comment resolution joint integ preB.WIP-
1:NEXT(227$);

227$        BRANCH,       1:
                    With,(99)/100,7414$,Yes:
                    Else,7415$,Yes;
```

```
7414$	ASSIGN:	MAJCOM approval joint integ preB.NumberOut True=MAJCOM approval joint
integ preB.NumberOut True + 1
		:NEXT(228$);

7415$	ASSIGN:	MAJCOM approval joint integ preB.NumberOut False=
		MAJCOM approval joint integ preB.NumberOut False + 1:NEXT(234$);

228$	BRANCH,	1:
		With,(50)/100,7416$,Yes:
		Else,7417$,Yes;
7416$	ASSIGN:	Document review phase joint integ preB.NumberOut True=
		Document review phase joint integ preB.NumberOut True + 1:NEXT(229$);

7417$	ASSIGN:	Document review phase joint integ preB.NumberOut False=
		Document review phase joint integ preB.NumberOut False + 1:NEXT(232$);

229$	ASSIGN:	Document review phase 2 flag level joint integ preB.NumberIn=
		Document review phase 2 flag level joint integ preB.NumberIn + 1:
		Document review phase 2 flag level joint integ preB.WIP=
		Document review phase 2 flag level joint integ preB.WIP+1;
7419$	DELAY:	Triangular(21,34,42),,VA;
7466$	ASSIGN:	Document review phase 2 flag level joint integ preB.NumberOut=
		Document review phase 2 flag level joint integ preB.NumberOut + 1:
		Document review phase 2 flag level joint integ preB.WIP=
		Document review phase 2 flag level joint integ preB.WIP-1:NEXT(230$);

230$	ASSIGN:	Resolving flag level comments joint integ preB.NumberIn=
		Resolving flag level comments joint integ preB.NumberIn + 1:
		Resolving flag level comments joint integ preB.WIP=
		Resolving flag level comments joint integ preB.WIP+1;
7470$	DELAY:	Triangular(15,28,30),,VA;
7517$	ASSIGN:	Resolving flag level comments joint integ preB.NumberOut=
		Resolving flag level comments joint integ preB.NumberOut + 1:
		Resolving flag level comments joint integ preB.WIP=
		Resolving flag level comments joint integ preB.WIP-1:NEXT(231$);

231$	BRANCH,	1:
		With,(99)/100,7520$,Yes:
		Else,7521$,Yes;
7520$	ASSIGN:	MAJCOM approval later on joint integ preB.NumberOut True=
		MAJCOM approval later on joint integ preB.NumberOut True + 1:NEXT(232$);
```

```
7521$     ASSIGN:     MAJCOM approval later on joint integ preB.NumberOut False=
              MAJCOM approval later on joint integ preB.NumberOut False + 1:NEXT(235$);

232$      ASSIGN:     Interoperability Certification joint integ preB.NumberIn=
              Interoperability Certification joint integ preB.NumberIn + 1:
              Interoperability Certification joint integ preB.WIP=
              Interoperability Certification joint integ preB.WIP+1;
7523$     DELAY:      Triangular(10,15,20),,VA;
7570$     ASSIGN:     Interoperability Certification joint integ preB.NumberOut=
              Interoperability Certification joint integ preB.NumberOut + 1:
              Interoperability Certification joint integ preB.WIP=
              Interoperability Certification joint integ preB.WIP-1:NEXT(233$);

233$      ASSIGN:     AFROC Preparations joint integ preB.NumberIn=AFROC Preparations joint integ
preB.NumberIn + 1:
              AFROC Preparations joint integ preB.WIP=AFROC Preparations joint integ preB.WIP+1;
7574$     DELAY:      Triangular(30,45,60),,VA;
7621$     ASSIGN:     AFROC Preparations joint integ preB.NumberOut=AFROC Preparations joint
integ preB.NumberOut + 1:
              AFROC Preparations joint integ preB.WIP=AFROC Preparations joint integ preB.WIP-
1:NEXT(236$);

236$      BRANCH,     1:
              With,(90)/100,7624$,Yes:
              Else,7625$,Yes;
7624$     ASSIGN:     AFROC decision joint integ preB.NumberOut True=AFROC decision joint integ
preB.NumberOut True + 1
              :NEXT(241$);

7625$     ASSIGN:     AFROC decision joint integ preB.NumberOut False=AFROC decision joint integ
preB.NumberOut False + 1
              :NEXT(240$);

241$      BRANCH,     1:
              With,(25)/100,7626$,Yes:
              Else,7627$,Yes;
7626$     ASSIGN:     Post AFROC actions joint integ preB.NumberOut True=
              Post AFROC actions joint integ preB.NumberOut True + 1:NEXT(242$);

7627$     ASSIGN:     Post AFROC actions joint integ preB.NumberOut False=
              Post AFROC actions joint integ preB.NumberOut False + 1:NEXT(243$);
```

```
242$        ASSIGN:       Accomplish Post AFROC actions joint integ preB.NumberIn=
                    Accomplish Post AFROC actions joint integ preB.NumberIn + 1:
                    Accomplish Post AFROC actions joint integ preB.WIP=
                    Accomplish Post AFROC actions joint integ preB.WIP+1;
7629$       DELAY:        Triangular(1,11,15),,VA;
7676$       ASSIGN:       Accomplish Post AFROC actions joint integ preB.NumberOut=
                    Accomplish Post AFROC actions joint integ preB.NumberOut + 1:
                    Accomplish Post AFROC actions joint integ preB.WIP=
                    Accomplish Post AFROC actions joint integ preB.WIP-1:NEXT(243$);

243$        ASSIGN:       document signing and validation joint integ preB.NumberIn=
                    document signing and validation joint integ preB.NumberIn + 1:
                    document signing and validation joint integ preB.WIP=
                    document signing and validation joint integ preB.WIP+1;
7680$       DELAY:        Triangular(14,26,30),,VA;
7727$       ASSIGN:       document signing and validation joint integ preB.NumberOut=
                    document signing and validation joint integ preB.NumberOut + 1:
                    document signing and validation joint integ preB.WIP=
                    document signing and validation joint integ preB.WIP-1:NEXT(244$);

244$        BRANCH,       1:
                    With,(99)/100,7730$,Yes:
                    Else,7731$,Yes;
7730$       ASSIGN:       Final AFROC approval joint integ preB.NumberOut True=
                    Final AFROC approval joint integ preB.NumberOut True + 1:NEXT(7256$);

7731$       ASSIGN:       Final AFROC approval joint integ preB.NumberOut False=
                    Final AFROC approval joint integ preB.NumberOut False + 1:NEXT(245$);

245$        ASSIGN:       Final AFROC resolution joint integ preB.NumberIn=
                    Final AFROC resolution joint integ preB.NumberIn + 1:
                    Final AFROC resolution joint integ preB.WIP=Final AFROC resolution joint integ
preB.WIP+1;
7733$       DELAY:        Triangular(42,48,60),,VA;
7780$       ASSIGN:       Final AFROC resolution joint integ preB.NumberOut=
                    Final AFROC resolution joint integ preB.NumberOut + 1:
                    Final AFROC resolution joint integ preB.WIP=Final AFROC resolution joint integ
preB.WIP-1
                    :NEXT(7256$);

240$        BRANCH,       1:
                    If,AFROC Count PreB==1,7783$,Yes:
```

```
          Else,7784$,Yes;
7783$   ASSIGN:   Check for previous path joint integ preB.NumberOut True=
          Check for previous path joint integ preB.NumberOut True + 1:NEXT(246$);

7784$   ASSIGN:   Check for previous path joint integ preB.NumberOut False=
          Check for previous path joint integ preB.NumberOut False + 1:NEXT(239$);

246$    ASSIGN:   Kill time at AFROC joint integ PreB=TNOW:
          TFIN=TNOW:NEXT(247$);

247$    TALLY:    Record 22,INT(SimTime),1:NEXT(238$);

238$    ASSIGN:   Death at AFROC joint integ preB.NumberOut=Death at AFROC joint integ
preB.NumberOut + 1;
7785$   DISPOSE:  Yes;

239$    ASSIGN:   AFROC Count PreB=1:NEXT(237$);

237$    BRANCH,   1:
          With,(99)/100,7786$,Yes:
          Else,7787$,Yes;
7786$   ASSIGN:   Dead activity joint integ preB.NumberOut True=Dead activity joint integ
preB.NumberOut True + 1
          :NEXT(246$);

7787$   ASSIGN:   Dead activity joint integ preB.NumberOut False=Dead activity joint integ
preB.NumberOut False + 1
          :NEXT(226$);

235$    ASSIGN:   Hold for a year later in process 2nd time joint integ preB.NumberIn=
          Hold for a year later in process 2nd time joint integ preB.NumberIn + 1:
          Hold for a year later in process 2nd time joint integ preB.WIP=
          Hold for a year later in process 2nd time joint integ preB.WIP+1;
7789$   DELAY:    Triangular(270,300,365),,NVA;
7836$   ASSIGN:   Hold for a year later in process 2nd time joint integ preB.NumberOut=
          Hold for a year later in process 2nd time joint integ preB.NumberOut + 1:
          Hold for a year later in process 2nd time joint integ preB.WIP=
          Hold for a year later in process 2nd time joint integ preB.WIP-1:NEXT(232$);

234$    ASSIGN:   Hold for a year later in process joint integ preB.NumberIn=
          Hold for a year later in process joint integ preB.NumberIn + 1:
          Hold for a year later in process joint integ preB.WIP=
```

```
                Hold for a year later in process joint integ preB.WIP+1;
7840$     DELAY:     Triangular(270,300,365),,NVA;
7887$     ASSIGN:    Hold for a year later in process joint integ preB.NumberOut=
                Hold for a year later in process joint integ preB.NumberOut + 1:
                Hold for a year later in process joint integ preB.WIP=
                Hold for a year later in process joint integ preB.WIP-1:NEXT(228$);

7256$     ASSIGN:    Joint Integration PreB.NumberOut=Joint Integration PreB.NumberOut + 1:
                Joint Integration PreB.WIP=Joint Integration PreB.WIP-1:NEXT(221$);


;
;
;    Model statements for module:  BasicProcess.Decide 72 (Check Condition PreB)
;
187$      BRANCH,    1:
                If,RequirementPathTrack>=1,7890$,Yes:
                Else,7891$,Yes;
7890$     ASSIGN:    Check Condition PreB.NumberOut True=Check Condition PreB.NumberOut True
+ 1:NEXT(674$);

7891$     ASSIGN:    Check Condition PreB.NumberOut False=Check Condition PreB.NumberOut False
+ 1:NEXT(186$);


;
;
;    Model statements for module:  BasicProcess.Record 33 (Record 33)
;
674$      TALLY:     Record 33,INT(SimTime),1:NEXT(176$);


;
;
;    Model statements for module:  BasicProcess.Assign 23 (end simulation PreB)
;
176$      ASSIGN:    Kill at begin of requirements swimlane PreB=1:
                TFIN=TNOW:NEXT(18$);


;
;
```

```
;     Model statements for module:  BasicProcess.Dispose 5 (End prior to start of Requirements swimlane
PreB)
;
18$          ASSIGN:       End prior to start of Requirements swimlane PreB.NumberOut=
                           End prior to start of Requirements swimlane PreB.NumberOut + 1;
7892$        DISPOSE:      No;


;
;
;     Model statements for module:  BasicProcess.Assign 25 (Add counter through feedback path PreB)
;
186$         ASSIGN:       RequirementPathTrackPreB=RequirementPathTrackPreB + 1:NEXT(185$);


;
;
;     Model statements for module:  BasicProcess.Decide 71 (Decision to Repursue PreB)
;
185$         BRANCH,       1:
                           With,(85)/100,7893$,Yes:
                           Else,7894$,Yes;
7893$        ASSIGN:       Decision to Repursue PreB.NumberOut True=Decision to Repursue
PreB.NumberOut True + 1:NEXT(188$);

7894$        ASSIGN:       Decision to Repursue PreB.NumberOut False=Decision to Repursue
PreB.NumberOut False + 1:NEXT(675$);


;
;
;     Model statements for module:  BasicProcess.Process 89 (Update Briefing Materials PreB)
;
188$         ASSIGN:       Update Briefing Materials PreB.NumberIn=Update Briefing Materials
PreB.NumberIn + 1:
                           Update Briefing Materials PreB.WIP=Update Briefing Materials PreB.WIP+1;
7896$        DELAY:        Triangular(10,35,40),,VA;
7943$        ASSIGN:       Update Briefing Materials PreB.NumberOut=Update Briefing Materials
PreB.NumberOut + 1:
                           Update Briefing Materials PreB.WIP=Update Briefing Materials PreB.WIP-1:NEXT(180$);
```

```
;
;
;    Model statements for module:  BasicProcess.Record 34 (Record 34)
;
675$         TALLY:        Record 34,INT(SimTime),1:NEXT(176$);


;
;
;    Model statements for module:  BasicProcess.Decide 65 (Check on conditions)
;
175$         BRANCH,       1:
                     If,PreBpursuerequirements==1,7946$,Yes:
                     Else,7947$,Yes;
7946$        ASSIGN:       Check on conditions.NumberOut True=Check on conditions.NumberOut True +
1:NEXT(659$);

7947$        ASSIGN:       Check on conditions.NumberOut False=Check on conditions.NumberOut False +
1:NEXT(177$);


;
;
;    Model statements for module:  BasicProcess.Record 3 (Record 3)
;
659$         TALLY:        Record 3,INT(SimTime),1:NEXT(176$);


;
;
;    Model statements for module:  BasicProcess.Assign 24 (Set check on decision variable)
;
177$         ASSIGN:       PreBpursuerequirements=1:NEXT(178$);


;
;
;    Model statements for module:  BasicProcess.Process 80 (Wait for more favorable conditions)
;
178$         ASSIGN:       Wait for more favorable conditions.NumberIn=Wait for more favorable
conditions.NumberIn + 1:
                     Wait for more favorable conditions.WIP=Wait for more favorable conditions.WIP+1;
```

```
7949$      DELAY:      Triangular(100,115,150),,VA;
7996$      ASSIGN:      Wait for more favorable conditions.NumberOut=Wait for more favorable
conditions.NumberOut + 1:
                  Wait for more favorable conditions.WIP=Wait for more favorable conditions.WIP-
1:NEXT(174$);


;
;
;    Model statements for module:  BasicProcess.Process 146 (RFP Release and Source Selection PreB)
;
284$      ASSIGN:      RFP Release and Source Selection PreB.NumberIn=RFP Release and Source
Selection PreB.NumberIn + 1:
                  RFP Release and Source Selection PreB.WIP=RFP Release and Source Selection
PreB.WIP+1;
8000$      DELAY:      Triangular(90,160,180),,VA;
8047$      ASSIGN:      RFP Release and Source Selection PreB.NumberOut=RFP Release and Source
Selection PreB.NumberOut + 1:
                  RFP Release and Source Selection PreB.WIP=RFP Release and Source Selection
PreB.WIP-1:NEXT(285$);


;
;
;    Model statements for module:  BasicProcess.Decide 114 (Protest award PreB)
;
285$      BRANCH,      1:
                  With,(20)/100,8050$,Yes:
                  Else,8051$,Yes;
8050$      ASSIGN:      Protest award PreB.NumberOut True=Protest award PreB.NumberOut True +
1:NEXT(287$);

8051$      ASSIGN:      Protest award PreB.NumberOut False=Protest award PreB.NumberOut False +
1:NEXT(286$);


;
;
;    Model statements for module:  BasicProcess.Process 148 (Delay for Protest review PreB)
;
287$      ASSIGN:      Delay for Protest review PreB.NumberIn=Delay for Protest review PreB.NumberIn
+ 1:
```

```
                    Delay for Protest review PreB.WIP=Delay for Protest review PreB.WIP+1;
8053$       DELAY:       Triangular(30,50,60),,VA;
8100$       ASSIGN:      Delay for Protest review PreB.NumberOut=Delay for Protest review
PreB.NumberOut + 1:
                    Delay for Protest review PreB.WIP=Delay for Protest review PreB.WIP-1:NEXT(288$);


;
;
;    Model statements for module:  BasicProcess.Decide 115 (Protest upheld)
;
288$        BRANCH,      1:
                    With,(40)/100,8103$,Yes:
                    Else,8104$,Yes;
8103$       ASSIGN:      Protest upheld.NumberOut True=Protest upheld.NumberOut True +
1:NEXT(284$);

8104$       ASSIGN:      Protest upheld.NumberOut False=Protest upheld.NumberOut False +
1:NEXT(286$);


;
;
;    Model statements for module:  BasicProcess.Process 147 (Scope and Award Technology
Development Contracts)
;
286$        ASSIGN:      Scope and Award Technology Development Contracts.NumberIn=
                    Scope and Award Technology Development Contracts.NumberIn + 1:
                    Scope and Award Technology Development Contracts.WIP=
                    Scope and Award Technology Development Contracts.WIP+1;
8106$       DELAY:       Triangular(30,100,120),,VA;
8153$       ASSIGN:      Scope and Award Technology Development Contracts.NumberOut=
                    Scope and Award Technology Development Contracts.NumberOut + 1:
                    Scope and Award Technology Development Contracts.WIP=
                    Scope and Award Technology Development Contracts.WIP-1:NEXT(292$);


;
;
;    Model statements for module:  BasicProcess.Decide 116 (Path depends upon ACAT level PreB)
;
292$        BRANCH,      1:
```

```
                    If,ACAT Level==1,289$,Yes:
                    If,ACAT Level==2,290$,Yes:
                    Else,291$,Yes;

;
;
;    Model statements for module:  BasicProcess.Assign 41 (ACAT III Contract Length)
;
291$         ASSIGN:       contract cost=1:
                    TD Contract Start=TNOW:
                    TD original contract length=TRIA(365, 480, 2190):NEXT(371$);



;
;
;    Model statements for module:  BasicProcess.Assign 71 (Determine contract end date)
;
371$         ASSIGN:       TD Contract length=TD original contract length:
                    TD Contract End Date=TD Contract Start + TD original contract length:NEXT(293$);



;
;
;    Model statements for module:  BasicProcess.Separate 11 (Split flow PreB)
;
293$         DUPLICATE,     100 - 0:
                    1,8160$,0:NEXT(8159$);

8159$        ASSIGN:       Split flow PreB.NumberOut Orig=Split flow PreB.NumberOut Orig +
1:NEXT(368$);

8160$        ASSIGN:       Split flow PreB.NumberOut Dup=Split flow PreB.NumberOut Dup +
1:NEXT(313$);



;
;
;    Model statements for module:  AdvancedProcess.Hold 8 (Wait for signal for Costing and Acquisition
Planning activities PreB)
;
368$         QUEUE,        Wait for signal for Costing and Acquisition Planning activities PreB.Queue;
          SCAN:         Acq Plan PreB==1:NEXT(367$);
```

```
;
;
;    Model statements for module:  BasicProcess.Separate 19 (Split into Acq Planning and Costing
Activities)
;
367$        DUPLICATE,     100 - 0:
                 1,8163$,0:NEXT(8162$);

8162$       ASSIGN:      Split into Acq Planning and Costing Activities.NumberOut Orig=
                 Split into Acq Planning and Costing Activities.NumberOut Orig + 1:NEXT(342$);

8163$       ASSIGN:      Split into Acq Planning and Costing Activities.NumberOut Dup=
                 Split into Acq Planning and Costing Activities.NumberOut Dup + 1:NEXT(309$);


;
;
;    Model statements for module:  BasicProcess.Separate 16 (Split into costing activities PreB)
;
342$        DUPLICATE,     100 - 0:
                 1,8166$,0:NEXT(8165$);

8165$       ASSIGN:      Split into costing activities PreB.NumberOut Orig=
                 Split into costing activities PreB.NumberOut Orig + 1:NEXT(343$);

8166$       ASSIGN:      Split into costing activities PreB.NumberOut Dup=
                 Split into costing activities PreB.NumberOut Dup + 1:NEXT(344$);


;
;
;    Model statements for module:  BasicProcess.Separate 17 (Second split into costing activities PreB)
;
343$        DUPLICATE,     100 - 0:
                 1,8169$,0:NEXT(8168$);

8168$       ASSIGN:      Second split into costing activities PreB.NumberOut Orig=
                 Second split into costing activities PreB.NumberOut Orig + 1:NEXT(345$);

8169$       ASSIGN:      Second split into costing activities PreB.NumberOut Dup=
```

```
                Second split into costing activities PreB.NumberOut Dup + 1:NEXT(346$);


;
;
;     Model statements for module:  BasicProcess.Process 173 (Contractor cost estimate PreB)
;
345$       ASSIGN:      Contractor cost estimate PreB.NumberIn=Contractor cost estimate
PreB.NumberIn + 1:
                Contractor cost estimate PreB.WIP=Contractor cost estimate PreB.WIP+1;
8171$      DELAY:       Triangular(45,50,90),,VA;
8218$      ASSIGN:      Contractor cost estimate PreB.NumberOut=Contractor cost estimate
PreB.NumberOut + 1:
                Contractor cost estimate PreB.WIP=Contractor cost estimate PreB.WIP-1:NEXT(347$);


;
;
;     Model statements for module:  BasicProcess.Batch 13 (for Affordability Assessment PreB)
;
347$       QUEUE,       for Affordability Assessment PreB.Queue;
8221$      GROUP,       ,Permanent:3,Last:NEXT(8222$);

8222$      ASSIGN:      for Affordability Assessment PreB.NumberOut=for Affordability Assessment
PreB.NumberOut + 1
                :NEXT(348$);


;
;
;     Model statements for module:  BasicProcess.Process 175 (Affordability Assessment PreB)
;
348$       ASSIGN:      Affordability Assessment PreB.NumberIn=Affordability Assessment
PreB.NumberIn + 1:
                Affordability Assessment PreB.WIP=Affordability Assessment PreB.WIP+1;
8224$      DELAY:       Triangular(120,160,180),,VA;
8271$      ASSIGN:      Affordability Assessment PreB.NumberOut=Affordability Assessment
PreB.NumberOut + 1:
                Affordability Assessment PreB.WIP=Affordability Assessment PreB.WIP-1:NEXT(349$);


;
```

```
;
;     Model statements for module:  BasicProcess.Separate 18 (for funding check)
;
349$        DUPLICATE,     100 - 0:
                    1,8276$,0:NEXT(8275$);

8275$       ASSIGN:       for funding check.NumberOut Orig=for funding check.NumberOut Orig +
1:NEXT(265$);

8276$       ASSIGN:       for funding check.NumberOut Dup=for funding check.NumberOut Dup +
1:NEXT(341$);


;
;
;     Model statements for module:  BasicProcess.Decide 106 (Funds set aside for next phase in FYDP at
80 percent of ICE amount PreB)
;
265$        BRANCH,       1:
                    With,(70)/100,8277$,Yes:
                    Else,8278$,Yes;
8277$       ASSIGN:       Funds set aside for next phase in FYDP at 80 percent of ICE amount
PreB.NumberOut True=
                    Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB.NumberOut
True + 1
                    :NEXT(351$);

8278$       ASSIGN:       Funds set aside for next phase in FYDP at 80 percent of ICE amount
PreB.NumberOut False=
                    Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB.NumberOut
False + 1
                    :NEXT(268$);


;
;
;     Model statements for module:  AdvancedProcess.Hold 3 (KPPs arrive from Requirements)
;
351$        QUEUE,        KPPs arrive from Requirements.Queue;
          SCAN:         KPPs Ready PreB==1:NEXT(350$);
```

```
;
;
;     Model statements for module:  BasicProcess.Process 176 (Set Acquisition Program Baseline PreB)
;
350$          ASSIGN:        Set Acquisition Program Baseline PreB.NumberIn=Set Acquisition Program
Baseline PreB.NumberIn + 1:
                        Set Acquisition Program Baseline PreB.WIP=Set Acquisition Program Baseline
PreB.WIP+1;
8280$         DELAY:         Triangular(10,25,30),,VA;
8327$         ASSIGN:        Set Acquisition Program Baseline PreB.NumberOut=Set Acquisition Program
Baseline PreB.NumberOut + 1:
                        Set Acquisition Program Baseline PreB.WIP=Set Acquisition Program Baseline PreB.WIP-
1:NEXT(277$);


;
;
;     Model statements for module:  BasicProcess.Batch 8 (Complete predecessor activities preB)
;
277$          QUEUE,         Complete predecessor activities preB.Queue;
8330$         GROUP,         ,Permanent:2,Last:NEXT(8331$);

8331$         ASSIGN:        Complete predecessor activities preB.NumberOut=Complete predecessor
activities preB.NumberOut + 1
                        :NEXT(275$);


;
;
;     Model statements for module:  BasicProcess.Decide 111 (ACAT level check preB)
;
275$          BRANCH,        1:
                        If,ACAT Level==1,8332$,Yes:
                        Else,8333$,Yes;
8332$         ASSIGN:        ACAT level check preB.NumberOut True=ACAT level check preB.NumberOut
True + 1:NEXT(274$);

8333$         ASSIGN:        ACAT level check preB.NumberOut False=ACAT level check preB.NumberOut
False + 1:NEXT(276$);


;
```

```
;
;     Model statements for module:  BasicProcess.Process 143 (ACAT 1 Preparation for Acquisition Panels
preB)
;
274$         ASSIGN:       ACAT 1 Preparation for Acquisition Panels preB.NumberIn=
                        ACAT 1 Preparation for Acquisition Panels preB.NumberIn + 1:
                        ACAT 1 Preparation for Acquisition Panels preB.WIP=
                        ACAT 1 Preparation for Acquisition Panels preB.WIP+1;
8335$        DELAY:        Triangular(40,56,60),,VA;
8382$        ASSIGN:       ACAT 1 Preparation for Acquisition Panels preB.NumberOut=
                        ACAT 1 Preparation for Acquisition Panels preB.NumberOut + 1:
                        ACAT 1 Preparation for Acquisition Panels preB.WIP=
                        ACAT 1 Preparation for Acquisition Panels preB.WIP-1:NEXT(278$);


;
;
;     Model statements for module:  BasicProcess.Process 145 (Acquisition Panels PreB)
;
278$         ASSIGN:       Acquisition Panels PreB.NumberIn=Acquisition Panels PreB.NumberIn + 1:
                        Acquisition Panels PreB.WIP=Acquisition Panels PreB.WIP+1;
8386$        DELAY:        Triangular(15,30,35),,VA;
8433$        ASSIGN:       Acquisition Panels PreB.NumberOut=Acquisition Panels PreB.NumberOut + 1:
                        Acquisition Panels PreB.WIP=Acquisition Panels PreB.WIP-1:NEXT(353$);


;
;
;     Model statements for module:  BasicProcess.Process 144 (ACAT II or III Preparation for Acquisition
Panels preB)
;
276$         ASSIGN:       ACAT II or III Preparation for Acquisition Panels preB.NumberIn=
                        ACAT II or III Preparation for Acquisition Panels preB.NumberIn + 1:
                        ACAT II or III Preparation for Acquisition Panels preB.WIP=
                        ACAT II or III Preparation for Acquisition Panels preB.WIP+1;
8437$        DELAY:        Triangular(15,25,30),,VA;
8484$        ASSIGN:       ACAT II or III Preparation for Acquisition Panels preB.NumberOut=
                        ACAT II or III Preparation for Acquisition Panels preB.NumberOut + 1:
                        ACAT II or III Preparation for Acquisition Panels preB.WIP=
                        ACAT II or III Preparation for Acquisition Panels preB.WIP-1:NEXT(278$);
```

```
;
;
;    Model statements for module:  BasicProcess.Decide 107 (ACAT level preB)
;
268$         BRANCH,       1:
                     If,ACAT Level==1,8487$,Yes:
                     Else,8488$,Yes;
8487$        ASSIGN:       ACAT level preB.NumberOut True=ACAT level preB.NumberOut True +
1:NEXT(266$);

8488$        ASSIGN:       ACAT level preB.NumberOut False=ACAT level preB.NumberOut False +
1:NEXT(267$);



;
;
;    Model statements for module:  BasicProcess.Process 133 (ACAT I time delay PreB)
;
266$         ASSIGN:       ACAT I time delay PreB.NumberIn=ACAT I time delay PreB.NumberIn + 1:
                     ACAT I time delay PreB.WIP=ACAT I time delay PreB.WIP+1;
8490$        DELAY:        Triangular(30,120,180),,VA;
8537$        ASSIGN:       ACAT I time delay PreB.NumberOut=ACAT I time delay PreB.NumberOut + 1:
                     ACAT I time delay PreB.WIP=ACAT I time delay PreB.WIP-1:NEXT(351$);



;
;
;    Model statements for module:  BasicProcess.Process 134 (ACAT II or ACAT III time delay PreB)
;
267$         ASSIGN:       ACAT II or ACAT III time delay PreB.NumberIn=ACAT II or ACAT III time delay
PreB.NumberIn + 1:
                     ACAT II or ACAT III time delay PreB.WIP=ACAT II or ACAT III time delay PreB.WIP+1;
8541$        DELAY:        Triangular(90,225,270),,VA;
8588$        ASSIGN:       ACAT II or ACAT III time delay PreB.NumberOut=ACAT II or ACAT III time delay
PreB.NumberOut + 1:
                     ACAT II or ACAT III time delay PreB.WIP=ACAT II or ACAT III time delay PreB.WIP-
1:NEXT(351$);



;
;
;    Model statements for module:  BasicProcess.Batch 12 (Bring three processes together PreB)
```

```
;
341$        QUEUE,        Bring three processes together PreB.Queue;
8591$        GROUP,        ,Permanent:3,Last:NEXT(8592$);

8592$        ASSIGN:        Bring three processes together PreB.NumberOut=Bring three processes together
PreB.NumberOut + 1
                    :NEXT(277$);


;
;
;    Model statements for module:  BasicProcess.Process 174 (Independent Cost Estimate PreB)
;
346$        ASSIGN:        Independent Cost Estimate PreB.NumberIn=Independent Cost Estimate
PreB.NumberIn + 1:
                    Independent Cost Estimate PreB.WIP=Independent Cost Estimate PreB.WIP+1;
8594$        DELAY:        Triangular(30,35,60),,VA;
8641$        ASSIGN:        Independent Cost Estimate PreB.NumberOut=Independent Cost Estimate
PreB.NumberOut + 1:
                    Independent Cost Estimate PreB.WIP=Independent Cost Estimate PreB.WIP-
1:NEXT(347$);


;
;
;    Model statements for module:  BasicProcess.Process 172 (Program Office Cost Estimate PreB)
;
344$        ASSIGN:        Program Office Cost Estimate PreB.NumberIn=Program Office Cost Estimate
PreB.NumberIn + 1:
                    Program Office Cost Estimate PreB.WIP=Program Office Cost Estimate PreB.WIP+1;
8645$        DELAY:        Triangular(60,65,90),,VA;
8692$        ASSIGN:        Program Office Cost Estimate PreB.NumberOut=Program Office Cost Estimate
PreB.NumberOut + 1:
                    Program Office Cost Estimate PreB.WIP=Program Office Cost Estimate PreB.WIP-
1:NEXT(347$);


;
;
;    Model statements for module:  BasicProcess.Process 157 (Acquisition Planning Activities PreB)
;
```

```
309$        ASSIGN:       Acquisition Planning Activities PreB.NumberIn=Acquisition Planning Activities
PreB.NumberIn + 1:
                    Acquisition Planning Activities PreB.WIP=Acquisition Planning Activities
PreB.WIP+1:NEXT(310$);

310$        BRANCH,       1:
                    If,ACAT Level==1,8746$,Yes:
                    Else,8747$,Yes;
8746$       ASSIGN:       Acq planning activities depend upon ACAT level preB.NumberOut True=
                    Acq planning activities depend upon ACAT level preB.NumberOut True + 1:NEXT(311$);

8747$       ASSIGN:       Acq planning activities depend upon ACAT level preB.NumberOut False=
                    Acq planning activities depend upon ACAT level preB.NumberOut False + 1:NEXT(312$);

311$        ASSIGN:       ACAT I Acquisition Planning PreB.NumberIn=ACAT I Acquisition Planning
PreB.NumberIn + 1:
                    ACAT I Acquisition Planning PreB.WIP=ACAT I Acquisition Planning PreB.WIP+1;
8749$       DELAY:        Triangular(120,240,250),,VA;
8796$       ASSIGN:       ACAT I Acquisition Planning PreB.NumberOut=ACAT I Acquisition Planning
PreB.NumberOut + 1:
                    ACAT I Acquisition Planning PreB.WIP=ACAT I Acquisition Planning PreB.WIP-
1:NEXT(8743$);

312$        ASSIGN:       ACAT II Or III Acquisition Planning PreB.NumberIn=
                    ACAT II Or III Acquisition Planning PreB.NumberIn + 1:
                    ACAT II Or III Acquisition Planning PreB.WIP=ACAT II Or III Acquisition Planning
PreB.WIP+1;
8800$       DELAY:        Triangular(120,185,250),,VA;
8847$       ASSIGN:       ACAT II Or III Acquisition Planning PreB.NumberOut=
                    ACAT II Or III Acquisition Planning PreB.NumberOut + 1:
                    ACAT II Or III Acquisition Planning PreB.WIP=ACAT II Or III Acquisition Planning
PreB.WIP-1
                    :NEXT(8743$);

8743$       ASSIGN:       Acquisition Planning Activities PreB.NumberOut=Acquisition Planning Activities
PreB.NumberOut + 1:
                    Acquisition Planning Activities PreB.WIP=Acquisition Planning Activities PreB.WIP-
1:NEXT(269$);


;
;
```

```
;     Model statements for module:  BasicProcess.Batch 7 (Processes come together PreB)
;
269$         QUEUE,        Processes come together PreB.Queue;
8850$        GROUP,        ,Permanent:2,Last:NEXT(8851$);

8851$        ASSIGN:       Processes come together PreB.NumberOut=Processes come together
PreB.NumberOut + 1:NEXT(270$);


;
;
;     Model statements for module:  BasicProcess.Process 140 (Draft RFP Preparation preB)
;
270$         ASSIGN:       Draft RFP Preparation preB.NumberIn=Draft RFP Preparation preB.NumberIn + 1:
                   Draft RFP Preparation preB.WIP=Draft RFP Preparation preB.WIP+1;
8853$        DELAY:        Triangular(10,17,20),,VA;
8900$        ASSIGN:       Draft RFP Preparation preB.NumberOut=Draft RFP Preparation preB.NumberOut
+ 1:
                   Draft RFP Preparation preB.WIP=Draft RFP Preparation preB.WIP-1:NEXT(271$);


;
;
;     Model statements for module:  BasicProcess.Separate 9 (Separate activities once preB)
;
271$         DUPLICATE,     100 - 0:
                   1,8905$,0:NEXT(8904$);

8904$        ASSIGN:       Separate activities once preB.NumberOut Orig=Separate activities once
preB.NumberOut Orig + 1
                   :NEXT(272$);

8905$        ASSIGN:       Separate activities once preB.NumberOut Dup=Separate activities once
preB.NumberOut Dup + 1
                   :NEXT(273$);


;
;
;     Model statements for module:  BasicProcess.Process 141 (RFP Coordination Process PreB)
;
```

```
272$        ASSIGN:       RFP Coordination Process PreB.NumberIn=RFP Coordination Process
PreB.NumberIn + 1:
                        RFP Coordination Process PreB.WIP=RFP Coordination Process PreB.WIP+1;
8907$       DELAY:        Triangular(25,45,50),,VA;
8954$       ASSIGN:       RFP Coordination Process PreB.NumberOut=RFP Coordination Process
PreB.NumberOut + 1:
                        RFP Coordination Process PreB.WIP=RFP Coordination Process PreB.WIP-1:NEXT(341$);


;
;
;     Model statements for module:  BasicProcess.Process 142 (Source selection plans preB)
;
273$        ASSIGN:       Source selection plans preB.NumberIn=Source selection plans preB.NumberIn +
1:
                        Source selection plans preB.WIP=Source selection plans preB.WIP+1;
8958$       DELAY:        Triangular(30,60,65),,VA;
9005$       ASSIGN:       Source selection plans preB.NumberOut=Source selection plans
preB.NumberOut + 1:
                        Source selection plans preB.WIP=Source selection plans preB.WIP-1:NEXT(341$);


;
;
;     Model statements for module:  BasicProcess.Process 160 (Contract Startup PreB)
;
313$        ASSIGN:       Contract Startup PreB.NumberIn=Contract Startup PreB.NumberIn + 1:
                        Contract Startup PreB.WIP=Contract Startup PreB.WIP+1;
9009$       DELAY:        Triangular(30,42,45),,VA;
9056$       ASSIGN:       Contract Startup PreB.NumberOut=Contract Startup PreB.NumberOut + 1:
                        Contract Startup PreB.WIP=Contract Startup PreB.WIP-1:NEXT(370$);


;
;
;     Model statements for module:  BasicProcess.Assign 70 (Set Contract Start variable)
;
370$        ASSIGN:       contract start=1:NEXT(361$);


;
;
```

```
;     Model statements for module:  AdvancedProcess.Hold 5 (Wait for T and E Start)
;
361$        QUEUE,        Wait for T and E Start.Queue;
          SCAN:         T and E Start PreB==1 && KPP Development signal PreB == 1:NEXT(323$);



;
;
;     Model statements for module:  BasicProcess.Process 163 (Developmental Test and Evaluation)
;
323$        ASSIGN:       Developmental Test and Evaluation.NumberIn=Developmental Test and
Evaluation.NumberIn + 1:
                   Developmental Test and Evaluation.WIP=Developmental Test and
Evaluation.WIP+1:NEXT(324$);

324$        BRANCH,       1:
                   If,ACAT Level==1,9110$,Yes:
                   Else,9111$,Yes;
9110$       ASSIGN:       Dev testing activities depend upon ACAT level preB.NumberOut True=
                   Dev testing activities depend upon ACAT level preB.NumberOut True + 1:NEXT(327$);

9111$       ASSIGN:       Dev testing activities depend upon ACAT level preB.NumberOut False=
                   Dev testing activities depend upon ACAT level preB.NumberOut False + 1:NEXT(328$);

327$        ASSIGN:       testinglength=TD Contract length*0.25:NEXT(325$);

325$        ASSIGN:       ACAT I Dev testing PreB.NumberIn=ACAT I Dev testing PreB.NumberIn + 1:
                   ACAT I Dev testing PreB.WIP=ACAT I Dev testing PreB.WIP+1;
9113$       DELAY:        TRIA( .75*testinglength , testinglength , 1.1*testinglength ),,VA;
9160$       ASSIGN:       ACAT I Dev testing PreB.NumberOut=ACAT I Dev testing PreB.NumberOut + 1:
                   ACAT I Dev testing PreB.WIP=ACAT I Dev testing PreB.WIP-1:NEXT(9107$);

328$        ASSIGN:       testinglength=TD Contract length * 0.15:NEXT(326$);

326$        ASSIGN:       ACAT II Or III Dev testing PreB.NumberIn=ACAT II Or III Dev testing
PreB.NumberIn + 1:
                   ACAT II Or III Dev testing PreB.WIP=ACAT II Or III Dev testing PreB.WIP+1;
9164$       DELAY:        TRIA( .75*testinglength , testinglength , 1.1*testinglength ),,VA;
9211$       ASSIGN:       ACAT II Or III Dev testing PreB.NumberOut=ACAT II Or III Dev testing
PreB.NumberOut + 1:
                   ACAT II Or III Dev testing PreB.WIP=ACAT II Or III Dev testing PreB.WIP-1:NEXT(9107$);
```

```
9107$       ASSIGN:     Developmental Test and Evaluation.NumberOut=Developmental Test and
Evaluation.NumberOut + 1:
                    Developmental Test and Evaluation.WIP=Developmental Test and Evaluation.WIP-
1:NEXT(329$);


;
;
;    Model statements for module:  BasicProcess.Decide 140 (Trades Needed)
;
329$        BRANCH,     1:
                    With,(70)/100,9214$,Yes:
                    Else,9215$,Yes;
9214$       ASSIGN:     Trades Needed.NumberOut True=Trades Needed.NumberOut True +
1:NEXT(333$);

9215$       ASSIGN:     Trades Needed.NumberOut False=Trades Needed.NumberOut False +
1:NEXT(330$);


;
;
;    Model statements for module:  BasicProcess.Process 167 (Dev testing rework and delay)
;
333$        ASSIGN:     Dev testing rework and delay.NumberIn=Dev testing rework and delay.NumberIn
+ 1:
                    Dev testing rework and delay.WIP=Dev testing rework and delay.WIP+1;
9217$       DELAY:      Triangular(30,90,180),,VA;
9264$       ASSIGN:     Dev testing rework and delay.NumberOut=Dev testing rework and
delay.NumberOut + 1:
                    Dev testing rework and delay.WIP=Dev testing rework and delay.WIP-1:NEXT(330$);


;
;
;    Model statements for module:  BasicProcess.Process 166 (Early Operational Assessment)
;
330$        ASSIGN:     Early Operational Assessment.NumberIn=Early Operational
Assessment.NumberIn + 1:
                    Early Operational Assessment.WIP=Early Operational Assessment.WIP+1:NEXT(332$);

332$        ASSIGN:     TD Contract End Date Near=1:
```

```
                    testinglength=TD Contract length*.10:NEXT(331$);

331$        ASSIGN:       EOA PreB.NumberIn=EOA PreB.NumberIn + 1:
                    EOA PreB.WIP=EOA PreB.WIP+1;
9319$       DELAY:        TRIA( .75*testinglength , testinglength , 1.1*testinglength ),,VA;
9366$       ASSIGN:       EOA PreB.NumberOut=EOA PreB.NumberOut + 1:
                    EOA PreB.WIP=EOA PreB.WIP-1:NEXT(9315$);

9315$       ASSIGN:       Early Operational Assessment.NumberOut=Early Operational
Assessment.NumberOut + 1:
                    Early Operational Assessment.WIP=Early Operational Assessment.WIP-1:NEXT(377$);


;
;
;    Model statements for module:  BasicProcess.Assign 72 (Declare EOA success)
;
377$        ASSIGN:       EOA success=1:NEXT(334$);


;
;
;    Model statements for module:  BasicProcess.Decide 142 (Additional Adjustments)
;
334$        BRANCH,       1:
                    With,(50)/100,9369$,Yes:
                    Else,9370$,Yes;
9369$       ASSIGN:       Additional Adjustments.NumberOut True=Additional Adjustments.NumberOut
True + 1:NEXT(335$);

9370$       ASSIGN:       Additional Adjustments.NumberOut False=Additional Adjustments.NumberOut
False + 1:NEXT(336$);


;
;
;    Model statements for module:  BasicProcess.Process 170 (EOA rework and delay preB)
;
335$        ASSIGN:       EOA rework and delay preB.NumberIn=EOA rework and delay preB.NumberIn +
1:
                    EOA rework and delay preB.WIP=EOA rework and delay preB.WIP+1;
9372$       DELAY:        Triangular(30,90,180),,VA;
```

```
9419$       ASSIGN:      EOA rework and delay preB.NumberOut=EOA rework and delay
preB.NumberOut + 1:
                    EOA rework and delay preB.WIP=EOA rework and delay preB.WIP-1:NEXT(336$);



;
;
;    Model statements for module:  BasicProcess.Decide 143 (System Requirements Review)
;
336$       BRANCH,      1:
                    With,(35)/100,9422$,Yes:
                    Else,9423$,Yes;
9422$       ASSIGN:      System Requirements Review.NumberOut True=System Requirements
Review.NumberOut True + 1:NEXT(340$);

9423$       ASSIGN:      System Requirements Review.NumberOut False=System Requirements
Review.NumberOut False + 1
                    :NEXT(337$);



;
;
;    Model statements for module:  BasicProcess.Assign 54 (System Performance Specification delivery)
;
340$       ASSIGN:      End TD contract=1:
                    TD final contract length=TD Contract length:
                    System Performance Specification=TNOW:NEXT(269$);



;
;
;    Model statements for module:  BasicProcess.Process 171 (SRR rework and delay)
;
337$       ASSIGN:      SRR rework and delay.NumberIn=SRR rework and delay.NumberIn + 1:
                    SRR rework and delay.WIP=SRR rework and delay.WIP+1;
9425$       DELAY:       Triangular(60,160,180),,VA;
9472$       ASSIGN:      SRR rework and delay.NumberOut=SRR rework and delay.NumberOut + 1:
                    SRR rework and delay.WIP=SRR rework and delay.WIP-1:NEXT(340$);



;
;
```

```
;    Model statements for module:  BasicProcess.Assign 39 (ACAT I Contract Length)
;
289$        ASSIGN:       TD Contract Start=TNOW:
                  contract cost=1:
                  TD original contract length=TRIA(365, 1980, 2190):NEXT(371$);


;
;
;    Model statements for module:  BasicProcess.Assign 40 (ACAT II Contract Length)
;
290$        ASSIGN:       contract cost=1:
                  TD Contract Start=TNOW:
                  TD original contract length=TRIA(365,1365,2190):NEXT(371$);


;
;
;    Model statements for module:  BasicProcess.Decide 62 (Check for previous MDA decision attempt
preA)
;
168$        BRANCH,       1:
                  If,MS A approval attempt==1,9475$,Yes:
                  Else,9476$,Yes;
9475$       ASSIGN:       Check for previous MDA decision attempt preA.NumberOut True=
                  Check for previous MDA decision attempt preA.NumberOut True + 1:NEXT(358$);

9476$       ASSIGN:       Check for previous MDA decision attempt preA.NumberOut False=
                  Check for previous MDA decision attempt preA.NumberOut False + 1:NEXT(170$);


;
;
;    Model statements for module:  BasicProcess.Assign 61 (End simulation 6)
;
358$        ASSIGN:       Kill at MS A decision time=TNOW:
                  TFIN=TNOW:NEXT(663$);


;
;
;    Model statements for module:  BasicProcess.Record 7 (Record 7)
```

```
;
663$         TALLY:        Record 7,INT(SimTime),1:NEXT(169$);


;
;
;    Model statements for module:  BasicProcess.Dispose 15 (Kill at MS A decision)
;
169$         ASSIGN:       Kill at MS A decision.NumberOut=Kill at MS A decision.NumberOut + 1;
9477$        DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Assign 21 (Assign counter to MDA loop)
;
170$         ASSIGN:       MS A approval attempt=1:NEXT(158$);


;
;
;    Model statements for module:  BasicProcess.Separate 5 (Separate again preA)
;
159$         DUPLICATE,     100 - 0:
                      1,9480$,0:NEXT(9479$);

9479$        ASSIGN:       Separate again preA.NumberOut Orig=Separate again preA.NumberOut Orig +
1:NEXT(163$);

9480$        ASSIGN:       Separate again preA.NumberOut Dup=Separate again preA.NumberOut Dup +
1:NEXT(161$);


;
;
;    Model statements for module:  BasicProcess.Decide 60 (ACAT level check preA)
;
163$         BRANCH,       1:
                      If,ACAT Level==1,9481$,Yes:
                      Else,9482$,Yes;
9481$        ASSIGN:       ACAT level check preA.NumberOut True=ACAT level check preA.NumberOut
True + 1:NEXT(162$);
```

```
9482$       ASSIGN:       ACAT level check preA.NumberOut False=ACAT level check preA.NumberOut
False + 1:NEXT(164$);


;
;
;     Model statements for module:  BasicProcess.Process 76 (ACAT 1 Preparation for Acquisition Panels
preA)
;
162$        ASSIGN:       ACAT 1 Preparation for Acquisition Panels preA.NumberIn=
                    ACAT 1 Preparation for Acquisition Panels preA.NumberIn + 1:
                    ACAT 1 Preparation for Acquisition Panels preA.WIP=
                    ACAT 1 Preparation for Acquisition Panels preA.WIP+1;
9484$       DELAY:        Triangular(40,56,60),,VA;
9531$       ASSIGN:       ACAT 1 Preparation for Acquisition Panels preA.NumberOut=
                    ACAT 1 Preparation for Acquisition Panels preA.NumberOut + 1:
                    ACAT 1 Preparation for Acquisition Panels preA.WIP=
                    ACAT 1 Preparation for Acquisition Panels preA.WIP-1:NEXT(136$);


;
;
;     Model statements for module:  BasicProcess.Decide 55 (Funds Available preA)
;
136$        BRANCH,       1:
                    With,(75)/100,9534$,Yes:
                    Else,9535$,Yes;
9534$       ASSIGN:       Funds Available preA.NumberOut True=Funds Available preA.NumberOut True +
1:NEXT(165$);

9535$       ASSIGN:       Funds Available preA.NumberOut False=Funds Available preA.NumberOut False
+ 1:NEXT(139$);


;
;
;     Model statements for module:  BasicProcess.Decide 56 (ACAT level preA)
;
139$        BRANCH,       1:
                    If,ACAT Level==1,9536$,Yes:
                    Else,9537$,Yes;
```

```
9536$       ASSIGN:       ACAT level preA.NumberOut True=ACAT level preA.NumberOut True +
1:NEXT(137$);

9537$       ASSIGN:       ACAT level preA.NumberOut False=ACAT level preA.NumberOut False +
1:NEXT(138$);


;
;
;     Model statements for module:  BasicProcess.Process 66 (ACAT I time delay)
;
137$        ASSIGN:       ACAT I time delay.NumberIn=ACAT I time delay.NumberIn + 1:
                          ACAT I time delay.WIP=ACAT I time delay.WIP+1;
9539$       DELAY:        Triangular(30,45,180),,VA;
9586$       ASSIGN:       ACAT I time delay.NumberOut=ACAT I time delay.NumberOut + 1:
                          ACAT I time delay.WIP=ACAT I time delay.WIP-1:NEXT(165$);


;
;
;     Model statements for module:  BasicProcess.Process 67 (ACAT II or ACAT III time delay)
;
138$        ASSIGN:       ACAT II or ACAT III time delay.NumberIn=ACAT II or ACAT III time delay.NumberIn
+ 1:
                          ACAT II or ACAT III time delay.WIP=ACAT II or ACAT III time delay.WIP+1;
9590$       DELAY:        Triangular(90,150,240),,VA;
9637$       ASSIGN:       ACAT II or ACAT III time delay.NumberOut=ACAT II or ACAT III time
delay.NumberOut + 1:
                          ACAT II or ACAT III time delay.WIP=ACAT II or ACAT III time delay.WIP-1:NEXT(165$);


;
;
;     Model statements for module:  BasicProcess.Process 77 (ACAT II or III Preparation for Acquisition
Panels)
;
164$        ASSIGN:       ACAT II or III Preparation for Acquisition Panels.NumberIn=
                          ACAT II or III Preparation for Acquisition Panels.NumberIn + 1:
                          ACAT II or III Preparation for Acquisition Panels.WIP=
                          ACAT II or III Preparation for Acquisition Panels.WIP+1;
9641$       DELAY:        Triangular(15,25,30),,VA;
9688$       ASSIGN:       ACAT II or III Preparation for Acquisition Panels.NumberOut=
```

```
                    ACAT II or III Preparation for Acquisition Panels.NumberOut + 1:
                    ACAT II or III Preparation for Acquisition Panels.WIP=
                    ACAT II or III Preparation for Acquisition Panels.WIP-1:NEXT(136$);


;
;
;    Model statements for module:  BasicProcess.Process 75 (Source selection plans preA)
;
161$         ASSIGN:       Source selection plans preA.NumberIn=Source selection plans preA.NumberIn +
1:
                    Source selection plans preA.WIP=Source selection plans preA.WIP+1;
9692$        DELAY:        Triangular(30,60,65),,VA;
9739$        ASSIGN:       Source selection plans preA.NumberOut=Source selection plans
preA.NumberOut + 1:
                    Source selection plans preA.WIP=Source selection plans preA.WIP-1:NEXT(165$);


;
;
;    Model statements for module:  BasicProcess.Assign 16 (Kill program at selected COA)
;
134$         ASSIGN:       Selected CoA Kill point=1:NEXT(357$);


;
;
;    Model statements for module:  BasicProcess.Assign 60 (End Simulation 5)
;
357$         ASSIGN:       End at COA PreA=TNOW:
                    tfin=TNOW:NEXT(661$);


;
;
;    Model statements for module:  BasicProcess.Record 5 (Record 5)
;
661$         TALLY:        Record 5,INT(SimTime),1:NEXT(135$);


;
;
```

```
;     Model statements for module:  BasicProcess.Dispose 13 (End Process at COA)
;
135$         ASSIGN:       End Process at COA.NumberOut=End Process at COA.NumberOut + 1;
9742$        DISPOSE:      No;


;
;
;     Model statements for module:  BasicProcess.Separate 3 (Continute other Acquisition Swimlane
activities preA)
;
153$         DUPLICATE,     100 - 0:
                   1,9745$,0:NEXT(9744$);

9744$        ASSIGN:       Continute other Acquisition Swimlane activities preA.NumberOut Orig=
                   Continute other Acquisition Swimlane activities preA.NumberOut Orig + 1:NEXT(131$);

9745$        ASSIGN:       Continute other Acquisition Swimlane activities preA.NumberOut Dup=
                   Continute other Acquisition Swimlane activities preA.NumberOut Dup + 1:NEXT(154$);


;
;
;     Model statements for module:  BasicProcess.Process 63 (Develop Courses of Action)
;
131$         ASSIGN:       Develop Courses of Action.NumberIn=Develop Courses of Action.NumberIn + 1:
                   Develop Courses of Action.WIP=Develop Courses of Action.WIP+1;
9747$        DELAY:        Triangular(30,160,180),,VA;
9794$        ASSIGN:       Develop Courses of Action.NumberOut=Develop Courses of Action.NumberOut +
1:
                   Develop Courses of Action.WIP=Develop Courses of Action.WIP-1:NEXT(150$);


;
;
;     Model statements for module:  BasicProcess.Process 72 (Develop TandE strategy and Technology
Development Strategy)
;
154$         ASSIGN:       Develop TandE strategy and Technology Development Strategy.NumberIn=
                   Develop TandE strategy and Technology Development Strategy.NumberIn + 1:
                   Develop TandE strategy and Technology Development Strategy.WIP=
                   Develop TandE strategy and Technology Development Strategy.WIP+1;
```

```
9798$       DELAY:       Triangular(30,150,180),,VA;
9845$       ASSIGN:      Develop TandE strategy and Technology Development Strategy.NumberOut=
                    Develop TandE strategy and Technology Development Strategy.NumberOut + 1:
                    Develop TandE strategy and Technology Development Strategy.WIP=
                    Develop TandE strategy and Technology Development Strategy.WIP-1:NEXT(156$);


;
;
;    Model statements for module:  BasicProcess.Separate 2 (Trigger Acquisition swimlane activity)
;
140$        DUPLICATE,    100 - 0:
                    1,9850$,0:NEXT(9849$);

9849$       ASSIGN:      Trigger Acquisition swimlane activity.NumberOut Orig=
                    Trigger Acquisition swimlane activity.NumberOut Orig + 1:NEXT(127$);

9850$       ASSIGN:      Trigger Acquisition swimlane activity.NumberOut Dup=
                    Trigger Acquisition swimlane activity.NumberOut Dup + 1:NEXT(653$);


;
;
;    Model statements for module:  BasicProcess.Decide 53 (Conduct AoA)
;
127$        BRANCH,      1:
                    With,(99)/100,9851$,Yes:
                    Else,9852$,Yes;
9851$       ASSIGN:      Conduct AoA.NumberOut True=Conduct AoA.NumberOut True + 1:NEXT(152$);

9852$       ASSIGN:      Conduct AoA.NumberOut False=Conduct AoA.NumberOut False + 1:NEXT(128$);


;
;
;    Model statements for module:  BasicProcess.Assign 19 (Start time check)
;
152$        ASSIGN:      Start AoA flag=1:
                    StarttimeofAoA=TNOW:NEXT(129$);


;
```

```
;
;     Model statements for module:  BasicProcess.Process 61 (Analysis of Alternatives)
;
129$          ASSIGN:       Analysis of Alternatives.NumberIn=Analysis of Alternatives.NumberIn + 1:
                            Analysis of Alternatives.WIP=Analysis of Alternatives.WIP+1;
9854$         DELAY:        Triangular(270,600,730),,VA;
9901$         ASSIGN:       Analysis of Alternatives.NumberOut=Analysis of Alternatives.NumberOut + 1:
                            Analysis of Alternatives.WIP=Analysis of Alternatives.WIP-1:NEXT(151$);


;
;
;     Model statements for module:  BasicProcess.Assign 18 (End Time check)
;
151$          ASSIGN:       CompletetimeofAoA=TNOW:NEXT(150$);


;
;
;     Model statements for module:  BasicProcess.Assign 15 (Set AoA kill flag)
;
128$          ASSIGN:       AoA killed=1:NEXT(356$);


;
;
;     Model statements for module:  BasicProcess.Assign 59 (End simulation 4)
;
356$          ASSIGN:       Killed at AoA=TNOW:
                            TFIN=TNOW:NEXT(660$);


;
;
;     Model statements for module:  BasicProcess.Record 4 (Record 4)
;
660$          TALLY:        Record 4,INT(SimTime),1:NEXT(33$);


;
;
;     Model statements for module:  BasicProcess.Dispose 9 (End at AoA check)
```

```
;
33$         ASSIGN:       End at AoA check.NumberOut=End at AoA check.NumberOut + 1;
9904$        DISPOSE:      No;


;
;
;    Model statements for module:  AdvancedProcess.Hold 21 (Wait for AoA Start)
;
653$         QUEUE,        Wait for AoA Start.Queue;
           SCAN:         Start AoA flag == 1:NEXT(153$);


;
;
;    Model statements for module:  BasicProcess.Process 60 (Develop AoA Plan)
;
126$         ASSIGN:       Develop AoA Plan.NumberIn=Develop AoA Plan.NumberIn + 1:
                      Develop AoA Plan.WIP=Develop AoA Plan.WIP+1;
9906$        DELAY:        Triangular(60,75,90),,VA;
9953$        ASSIGN:       Develop AoA Plan.NumberOut=Develop AoA Plan.NumberOut + 1:
                      Develop AoA Plan.WIP=Develop AoA Plan.WIP-1:NEXT(140$);


;
;
;    Model statements for module:  BasicProcess.Decide 59 (Check for previous path)
;
146$         BRANCH,       1:
                      If,AcqPanelTry==1,9956$,Yes:
                      Else,9957$,Yes;
9956$        ASSIGN:       Check for previous path.NumberOut True=Check for previous path.NumberOut
True + 1:NEXT(359$);

9957$        ASSIGN:       Check for previous path.NumberOut False=Check for previous path.NumberOut
False + 1:NEXT(148$);


;
;
;    Model statements for module:  BasicProcess.Assign 62 (End simulation 7)
;
```

```
359$      ASSIGN:    Kill by MDA at Concept Decision PreA=TNOW:
                TFIN=TNOW:NEXT(662$);


;
;
;   Model statements for module:  BasicProcess.Record 6 (Record 6)
;
662$      TALLY:     Record 6,INT(SimTime),1:NEXT(147$);


;
;
;   Model statements for module:  BasicProcess.Dispose 14 (Kill by MDA at Concept Decision)
;
147$      ASSIGN:    Kill by MDA at Concept Decision.NumberOut=Kill by MDA at Concept
Decision.NumberOut + 1;
9958$     DISPOSE:   No;


;
;
;   Model statements for module:  BasicProcess.Assign 17 (Set path counter)
;
148$      ASSIGN:    AcqPanelTry=1:NEXT(141$);


;
;
;   Model statements for module:  BasicProcess.Process 69 (ACAT II or III Prepare for Acquisition Panels
preA)
;
143$      ASSIGN:    ACAT II or III Prepare for Acquisition Panels preA.NumberIn=
                ACAT II or III Prepare for Acquisition Panels preA.NumberIn + 1:
                ACAT II or III Prepare for Acquisition Panels preA.WIP=
                ACAT II or III Prepare for Acquisition Panels preA.WIP+1;
9960$     DELAY:     Triangular(15,30,35),,VA;
10007$    ASSIGN:    ACAT II or III Prepare for Acquisition Panels preA.NumberOut=
                ACAT II or III Prepare for Acquisition Panels preA.NumberOut + 1:
                ACAT II or III Prepare for Acquisition Panels preA.WIP=
                ACAT II or III Prepare for Acquisition Panels preA.WIP-1:NEXT(144$);
```

```
;
;
;     Model statements for module:  BasicProcess.Process 59 (Wait for a year)
;
122$          ASSIGN:        Wait for a year.NumberIn=Wait for a year.NumberIn + 1:
                        Wait for a year.WIP=Wait for a year.WIP+1;
10011$        DELAY:         Triangular(180,250,270),,VA;
10058$        ASSIGN:        Wait for a year.NumberOut=Wait for a year.NumberOut + 1:
                        Wait for a year.WIP=Wait for a year.WIP-1:NEXT(141$);


;
;
;     Model statements for module:  BasicProcess.Decide 50 (ACAT II or ACAT III funding)
;
123$          BRANCH,        1:
                        With,(99)/100,10061$,Yes:
                        Else,10062$,Yes;
10061$        ASSIGN:        ACAT II or ACAT III funding.NumberOut True=ACAT II or ACAT III
funding.NumberOut True + 1
                        :NEXT(141$);

10062$        ASSIGN:        ACAT II or ACAT III funding.NumberOut False=ACAT II or ACAT III
funding.NumberOut False + 1
                        :NEXT(124$);


;
;
;     Model statements for module:  BasicProcess.Assign 14 (Set AoA Flag)
;
124$          ASSIGN:        AoA flag=1:NEXT(122$);


;
;
;     Model statements for module:  BasicProcess.Record 37 (Record 37)
;
678$          TALLY:         Record 37,INT(SimTime),1:NEXT(638$);
```

```
;
;
;    Model statements for module:  BasicProcess.Assign 134 (Reinsert into Acquisition Process B)
;
638$         ASSIGN:       Back into process at B time=TNOW:
                       Back into process at PreB=1:NEXT(157$);


;
;
;    Model statements for module:  BasicProcess.Record 38 (Record 38)
;
679$         TALLY:        Record 38,INT(SimTime),1:NEXT(637$);


;
;
;    Model statements for module:  BasicProcess.Assign 133 (Reinsert into Acquisition Process C)
;
637$         ASSIGN:       Back into process at C time=TNOW:
                       Back into process at PreC=1:NEXT(387$);


;
;
;    Model statements for module:  BasicProcess.Assign 57 (End simulation 2)
;
355$         ASSIGN:       Finish in Sustainment=TNOW:
                       TFIN=TNOW:NEXT(658$);


;
;
;    Model statements for module:  BasicProcess.Record 2 (Record 2)
;
658$         TALLY:        Record 2,INT(SimTime),1:NEXT(12$);


;
;
;    Model statements for module:  BasicProcess.Dispose 2 (Continue until completion and End of
process)
```

```
;
12$        ASSIGN:     Continue until completion and End of process.NumberOut=
                    Continue until completion and End of process.NumberOut + 1;
10063$     DISPOSE:    No;


;
;
;    Model statements for module:  BasicProcess.Process 5 (Determine type of requirements document
needed)
;
8$         ASSIGN:     Determine type of requirements document needed.NumberIn=
                    Determine type of requirements document needed.NumberIn + 1:
                    Determine type of requirements document needed.WIP=
                    Determine type of requirements document needed.WIP+1;
10065$     DELAY:      Triangular(14,118,180),,VA;
10112$     ASSIGN:     Determine type of requirements document needed.NumberOut=
                    Determine type of requirements document needed.NumberOut + 1:
                    Determine type of requirements document needed.WIP=
                    Determine type of requirements document needed.WIP-1:NEXT(9$);


;
;
;    Model statements for module:  BasicProcess.Decide 5 (Which Milestone?)
;
9$         BRANCH,     1:
                    With,(35)/100,641$,Yes:
                    With,(60)/100,643$,Yes:
                    Else,642$,Yes;

;
;
;    Model statements for module:  BasicProcess.Assign 138 (Requires AoA not ICD)
;
642$       ASSIGN:     Needs AOA ICD OK=1:
                    Requires AoA but not ICD=TNOW:NEXT(680$);


;
;
;    Model statements for module:  BasicProcess.Record 39 (Record 39)
```

```
;
680$        TALLY:       Record 39,INT(SimTime),1:NEXT(120$);


;
;
;    Model statements for module:  BasicProcess.Assign 137 (In Scope of existing CCD)
;
641$        ASSIGN:      PreB CCD OK=1:
                    Scope of Existing CCD=TNOW:NEXT(681$);


;
;
;    Model statements for module:  BasicProcess.Record 40 (Record 40)
;
681$        TALLY:       Record 40,INT(SimTime),1:NEXT(279$);


;
;
;    Model statements for module:  BasicProcess.Assign 139 (Entry after MS B)
;
643$        ASSIGN:      Direct entry to PreC Phase=1:
                    Direct entry into SDD phase=TNOW:NEXT(682$);


;
;
;    Model statements for module:  BasicProcess.Record 41 (Record 41)
;
682$        TALLY:       Record 41,INT(SimTime),1:NEXT(387$);


;
;
;    Model statements for module:  BasicProcess.Process 9 (Waiting Period)
;
13$         ASSIGN:      Waiting Period.NumberIn=Waiting Period.NumberIn + 1:
                    Waiting Period.WIP=Waiting Period.WIP+1;
10118$      DELAY:       Triangular(14,118,180),,VA;
10165$      ASSIGN:      Waiting Period.NumberOut=Waiting Period.NumberOut + 1:
```

```
                Waiting Period.WIP=Waiting Period.WIP-1:NEXT(14$);


;
;
;     Model statements for module:  BasicProcess.Decide 8 (Decision to pursue requirements)
;
14$          BRANCH,        1:
                With,(25)/100,10168$,Yes:
                Else,10169$,Yes;
10168$       ASSIGN:        Decision to pursue requirements.NumberOut True=Decision to pursue
requirements.NumberOut True + 1
                :NEXT(17$);

10169$       ASSIGN:        Decision to pursue requirements.NumberOut False=Decision to pursue
requirements.NumberOut False + 1
                :NEXT(383$);


;
;
;     Model statements for module:  BasicProcess.Process 11 (Draft briefing and materials)
;
17$          ASSIGN:        Draft briefing and materials.NumberIn=Draft briefing and materials.NumberIn + 1:
                Draft briefing and materials.WIP=Draft briefing and materials.WIP+1;
10171$       DELAY:         Triangular(10,31,40),,VA;
10218$       ASSIGN:        Draft briefing and materials.NumberOut=Draft briefing and
materials.NumberOut + 1:
                Draft briefing and materials.WIP=Draft briefing and materials.WIP-1:NEXT(19$);


;
;
;     Model statements for module:  BasicProcess.Decide 9 (MAJCOM A Letters Coordinate and Concur)
;
19$          BRANCH,        1:
                With,(80)/100,10221$,Yes:
                Else,10222$,Yes;
10221$       ASSIGN:        MAJCOM A Letters Coordinate and Concur.NumberOut True=
                MAJCOM A Letters Coordinate and Concur.NumberOut True + 1:NEXT(43$);

10222$       ASSIGN:        MAJCOM A Letters Coordinate and Concur.NumberOut False=
```

```
                MAJCOM A Letters Coordinate and Concur.NumberOut False + 1:NEXT(32$);


;
;
;     Model statements for module:  BasicProcess.Decide 21 (Check for ACAT level preA)
;
43$           BRANCH,        1:
                If,ACAT Level==1,10223$,Yes:
                Else,10224$,Yes;
10223$        ASSIGN:        Check for ACAT level preA.NumberOut True=Check for ACAT level
preA.NumberOut True + 1:NEXT(20$);

10224$        ASSIGN:        Check for ACAT level preA.NumberOut False=Check for ACAT level
preA.NumberOut False + 1:NEXT(22$);



;
;
;     Model statements for module:  BasicProcess.Decide 10 (Request for Funds between August and
December)
;
20$           BRANCH,        1:
                With,(70)/100,10225$,Yes:
                Else,10226$,Yes;
10225$        ASSIGN:        Request for Funds between August and December.NumberOut True=
                Request for Funds between August and December.NumberOut True + 1:NEXT(22$);

10226$        ASSIGN:        Request for Funds between August and December.NumberOut False=
                Request for Funds between August and December.NumberOut False + 1:NEXT(21$);



;
;
;     Model statements for module:  BasicProcess.Process 13 (Study for ICD Development)
;
22$           ASSIGN:        Study for ICD Development.NumberIn=Study for ICD Development.NumberIn + 1:
                Study for ICD Development.WIP=Study for ICD Development.WIP+1:NEXT(23$);

23$           BRANCH,        1:
                If,ACAT Level==1,10278$,Yes:
                Else,10279$,Yes;
```

```
10278$       ASSIGN:       Determine path.NumberOut True=Determine path.NumberOut True +
1:NEXT(24$);

10279$       ASSIGN:       Determine path.NumberOut False=Determine path.NumberOut False +
1:NEXT(25$);

24$          ASSIGN:       Longer Study.NumberIn=Longer Study.NumberIn + 1:
                    Longer Study.WIP=Longer Study.WIP+1;
10281$       DELAY:        Triangular(180,300,360),,VA;
10328$       ASSIGN:       Longer Study.NumberOut=Longer Study.NumberOut + 1:
                    Longer Study.WIP=Longer Study.WIP-1:NEXT(10275$);

25$          ASSIGN:       Short study.NumberIn=Short study.NumberIn + 1:
                    Short study.WIP=Short study.WIP+1;
10332$       DELAY:        Triangular(1,5,7),,VA;
10379$       ASSIGN:       Short study.NumberOut=Short study.NumberOut + 1:
                    Short study.WIP=Short study.WIP-1:NEXT(10275$);

10275$       ASSIGN:       Study for ICD Development.NumberOut=Study for ICD
Development.NumberOut + 1:
                    Study for ICD Development.WIP=Study for ICD Development.WIP-1:NEXT(26$);


;
;
;    Model statements for module:  BasicProcess.Process 14 (Update and Schedule Calendar)
;
26$          ASSIGN:       Update and Schedule Calendar.NumberIn=Update and Schedule
Calendar.NumberIn + 1:
                    Update and Schedule Calendar.WIP=Update and Schedule Calendar.WIP+1;
10383$       DELAY:        Triangular(3,12,15),,NVA;
10430$       ASSIGN:       Update and Schedule Calendar.NumberOut=Update and Schedule
Calendar.NumberOut + 1:
                    Update and Schedule Calendar.WIP=Update and Schedule Calendar.WIP-1:NEXT(27$);


;
;
;    Model statements for module:  BasicProcess.Decide 11 (PreRSR MAJCOM A8)
;
27$          BRANCH,       1:
                    With,(95)/100,10433$,Yes:
```

```
                    Else,10434$,Yes;
10433$      ASSIGN:      PreRSR MAJCOM A8.NumberOut True=PreRSR MAJCOM A8.NumberOut True +
1:NEXT(28$);

10434$      ASSIGN:      PreRSR MAJCOM A8.NumberOut False=PreRSR MAJCOM A8.NumberOut False +
1:NEXT(32$);



;
;
;    Model statements for module:  BasicProcess.Process 15 (Finalize RSR and calendar items)
;
28$         ASSIGN:      Finalize RSR and calendar items.NumberIn=Finalize RSR and calendar
items.NumberIn + 1:
                    Finalize RSR and calendar items.WIP=Finalize RSR and calendar items.WIP+1;
10436$      DELAY:       Triangular(21,28,35),,NVA;
10483$      ASSIGN:      Finalize RSR and calendar items.NumberOut=Finalize RSR and calendar
items.NumberOut + 1:
                    Finalize RSR and calendar items.WIP=Finalize RSR and calendar items.WIP-1:NEXT(29$);



;
;
;    Model statements for module:  BasicProcess.Decide 12 (RSR HQ USAF A5R)
;
29$         BRANCH,      1:
                    With,(98)/100,10486$,Yes:
                    Else,10487$,Yes;
10486$      ASSIGN:      RSR HQ USAF A5R.NumberOut True=RSR HQ USAF A5R.NumberOut True +
1:NEXT(44$);

10487$      ASSIGN:      RSR HQ USAF A5R.NumberOut False=RSR HQ USAF A5R.NumberOut False +
1:NEXT(32$);



;
;
;    Model statements for module:  BasicProcess.Process 22 (Form High Performance Team)
;
44$         ASSIGN:      Form High Performance Team.NumberIn=Form High Performance
Team.NumberIn + 1:
                    Form High Performance Team.WIP=Form High Performance Team.WIP+1;
```

```
10489$       DELAY:        Triangular(30,41,45),,Wait;
10536$       ASSIGN:       Form High Performance Team.NumberOut=Form High Performance
Team.NumberOut + 1:
                    Form High Performance Team.WIP=Form High Performance Team.WIP-1:NEXT(45$);


;
;
;    Model statements for module:  BasicProcess.Process 23 (High Performance Team work preA)
;
45$          ASSIGN:       High Performance Team work preA.NumberIn=High Performance Team work
preA.NumberIn + 1:
                    High Performance Team work preA.WIP=High Performance Team work preA.WIP+1;
10540$       DELAY:        Triangular(5,6,7),,VA;
10587$       ASSIGN:       High Performance Team work preA.NumberOut=High Performance Team work
preA.NumberOut + 1:
                    High Performance Team work preA.WIP=High Performance Team work preA.WIP-
1:NEXT(46$);


;
;
;    Model statements for module:  BasicProcess.Decide 22 (Determine document approval path preA)
;
46$          BRANCH,       1:
                    If,ACAT Level==3,103$,Yes:
                    If,ACAT Level==2,77$,Yes:
                    Else,47$,Yes;

;
;
;    Model statements for module:  BasicProcess.Process 24 (Joint Interest preA)
;
47$          ASSIGN:       Joint Interest preA.NumberIn=Joint Interest preA.NumberIn + 1:
                    Joint Interest preA.WIP=Joint Interest preA.WIP+1:NEXT(48$);

48$          ASSIGN:       draft document preA joint interest.NumberIn=draft document preA joint
interest.NumberIn + 1:
                    draft document preA joint interest.WIP=draft document preA joint interest.WIP+1;
10644$       DELAY:        Triangular(30,55,60),,VA;
10691$       ASSIGN:       draft document preA joint interest.NumberOut=draft document preA joint
interest.NumberOut + 1:
```

```
                    draft document preA joint interest.WIP=draft document preA joint interest.WIP-
1:NEXT(49$);

49$         ASSIGN:     Air Staff processes joint int preA.NumberIn=Air Staff processes joint int
preA.NumberIn + 1:
                    Air Staff processes joint int preA.WIP=Air Staff processes joint int preA.WIP+1;
10695$      DELAY:      Triangular(21,25,42),,VA;
10742$      ASSIGN:     Air Staff processes joint int preA.NumberOut=Air Staff processes joint int
preA.NumberOut + 1:
                    Air Staff processes joint int preA.WIP=Air Staff processes joint int preA.WIP-
1:NEXT(50$);

50$         BRANCH,     1:
                    With,(95)/100,10745$,Yes:
                    Else,10746$,Yes;
10745$      ASSIGN:     Critical Comments? joint int preA.NumberOut True=
                    Critical Comments? joint int preA.NumberOut True + 1:NEXT(51$);

10746$      ASSIGN:     Critical Comments? joint int preA.NumberOut False=
                    Critical Comments? joint int preA.NumberOut False + 1:NEXT(54$);

51$         ASSIGN:     Comment Resolution joint int preA.NumberIn=Comment Resolution joint int
preA.NumberIn + 1:
                    Comment Resolution joint int preA.WIP=Comment Resolution joint int preA.WIP+1;
10748$      DELAY:      Triangular(15,30,45),,VA;
10795$      ASSIGN:     Comment Resolution joint int preA.NumberOut=Comment Resolution joint int
preA.NumberOut + 1:
                    Comment Resolution joint int preA.WIP=Comment Resolution joint int preA.WIP-
1:NEXT(52$);

52$         BRANCH,     1:
                    With,(99)/100,10798$,Yes:
                    Else,10799$,Yes;
10798$      ASSIGN:     MAJCOM Approval? joint int preA.NumberOut True=MAJCOM Approval? joint
int preA.NumberOut True + 1
                    :NEXT(54$);

10799$      ASSIGN:     MAJCOM Approval? joint int preA.NumberOut False=MAJCOM Approval? joint
int preA.NumberOut False + 1
                    :NEXT(53$);
```

```
54$      ASSIGN:    AFROC Preparations joint int preA.NumberIn=AFROC Preparations joint int
preA.NumberIn + 1:
                AFROC Preparations joint int preA.WIP=AFROC Preparations joint int preA.WIP+1;
10801$   DELAY:     Triangular(30,45,60),,VA;
10848$   ASSIGN:    AFROC Preparations joint int preA.NumberOut=AFROC Preparations joint int
preA.NumberOut + 1:
                AFROC Preparations joint int preA.WIP=AFROC Preparations joint int preA.WIP-
1:NEXT(55$);

55$      BRANCH,    1:
                With,(90)/100,10851$,Yes:
                Else,10852$,Yes;
10851$   ASSIGN:    AFROC Decision joint int preA.NumberOut True=AFROC Decision joint int
preA.NumberOut True + 1
                :NEXT(56$);

10852$   ASSIGN:    AFROC Decision joint int preA.NumberOut False=AFROC Decision joint int
preA.NumberOut False + 1
                :NEXT(60$);

56$      BRANCH,    1:
                With,(25)/100,10853$,Yes:
                Else,10854$,Yes;
10853$   ASSIGN:    Post AFROC actions joint int preA.NumberOut True=
                Post AFROC actions joint int preA.NumberOut True + 1:NEXT(61$);

10854$   ASSIGN:    Post AFROC actions joint int preA.NumberOut False=
                Post AFROC actions joint int preA.NumberOut False + 1:NEXT(62$);

61$      ASSIGN:    Post AFROC actions.NumberIn=Post AFROC actions.NumberIn + 1:
                Post AFROC actions.WIP=Post AFROC actions.WIP+1;
10856$   DELAY:     Triangular(1,11,15),,VA;
10903$   ASSIGN:    Post AFROC actions.NumberOut=Post AFROC actions.NumberOut + 1:
                Post AFROC actions.WIP=Post AFROC actions.WIP-1:NEXT(62$);

62$      BRANCH,    1:
                With,(50)/100,10906$,Yes:
                Else,10907$,Yes;
10906$   ASSIGN:    Document Review Phase.NumberOut True=Document Review
Phase.NumberOut True + 1:NEXT(63$);
```

```
10907$       ASSIGN:       Document Review Phase.NumberOut False=Document Review
Phase.NumberOut False + 1:NEXT(67$);

63$          ASSIGN:       Document Reveiw Phase 2 Flag Level.NumberIn=Document Reveiw Phase 2 Flag
Level.NumberIn + 1:
                          Document Reveiw Phase 2 Flag Level.WIP=Document Reveiw Phase 2 Flag Level.WIP+1;
10909$       DELAY:        Triangular(21,38,42),,VA;
10956$       ASSIGN:       Document Reveiw Phase 2 Flag Level.NumberOut=Document Reveiw Phase 2
Flag Level.NumberOut + 1:
                          Document Reveiw Phase 2 Flag Level.WIP=Document Reveiw Phase 2 Flag Level.WIP-
1:NEXT(64$);

64$          ASSIGN:       Resolving Flag level comments.NumberIn=Resolving Flag level
comments.NumberIn + 1:
                          Resolving Flag level comments.WIP=Resolving Flag level comments.WIP+1;
10960$       DELAY:        Triangular(15,27,30),,VA;
11007$       ASSIGN:       Resolving Flag level comments.NumberOut=Resolving Flag level
comments.NumberOut + 1:
                          Resolving Flag level comments.WIP=Resolving Flag level comments.WIP-1:NEXT(65$);

65$          BRANCH,       1:
                          With,(99)/100,11010$,Yes:
                          Else,11011$,Yes;
11010$       ASSIGN:       MAJCOM approval.NumberOut True=MAJCOM approval.NumberOut True +
1:NEXT(67$);

11011$       ASSIGN:       MAJCOM approval.NumberOut False=MAJCOM approval.NumberOut False +
1:NEXT(66$);

67$          ASSIGN:       Functional Capabilities Board.NumberIn=Functional Capabilities Board.NumberIn
+ 1:
                          Functional Capabilities Board.WIP=Functional Capabilities Board.WIP+1;
11013$       DELAY:        Triangular(7,14,21),,VA;
11060$       ASSIGN:       Functional Capabilities Board.NumberOut=Functional Capabilities
Board.NumberOut + 1:
                          Functional Capabilities Board.WIP=Functional Capabilities Board.WIP-1:NEXT(68$);

68$          ASSIGN:       Joint Capabilities Board.NumberIn=Joint Capabilities Board.NumberIn + 1:
                          Joint Capabilities Board.WIP=Joint Capabilities Board.WIP+1;
11064$       DELAY:        Triangular(7,14,21),,VA;
11111$       ASSIGN:       Joint Capabilities Board.NumberOut=Joint Capabilities Board.NumberOut + 1:
                          Joint Capabilities Board.WIP=Joint Capabilities Board.WIP-1:NEXT(69$);
```

```
69$         BRANCH,       1:
                  With,(15)/100,11114$,Yes:
                  Else,11115$,Yes;
11114$      ASSIGN:      JCB issues.NumberOut True=JCB issues.NumberOut True + 1:NEXT(70$);

11115$      ASSIGN:      JCB issues.NumberOut False=JCB issues.NumberOut False + 1:NEXT(71$);

70$         ASSIGN:      Resolve JCB issues.NumberIn=Resolve JCB issues.NumberIn + 1:
                  Resolve JCB issues.WIP=Resolve JCB issues.WIP+1;
11117$      DELAY:       Triangular(10,15,20),,VA;
11164$      ASSIGN:      Resolve JCB issues.NumberOut=Resolve JCB issues.NumberOut + 1:
                  Resolve JCB issues.WIP=Resolve JCB issues.WIP-1:NEXT(71$);

71$         ASSIGN:      JROC preparations.NumberIn=JROC preparations.NumberIn + 1:
                  JROC preparations.WIP=JROC preparations.WIP+1;
11168$      DELAY:       Triangular(14,25,30),,VA;
11215$      ASSIGN:      JROC preparations.NumberOut=JROC preparations.NumberOut + 1:
                  JROC preparations.WIP=JROC preparations.WIP-1:NEXT(72$);

72$         BRANCH,       1:
                  With,(98)/100,11218$,Yes:
                  Else,11219$,Yes;
11218$      ASSIGN:      JROC.NumberOut True=JROC.NumberOut True + 1:NEXT(10640$);

11219$      ASSIGN:      JROC.NumberOut False=JROC.NumberOut False + 1:NEXT(73$);

73$         ASSIGN:      Resolve JROC issues.NumberIn=Resolve JROC issues.NumberIn + 1:
                  Resolve JROC issues.WIP=Resolve JROC issues.WIP+1;
11221$      DELAY:       Triangular(42,51,60),,VA;
11268$      ASSIGN:      Resolve JROC issues.NumberOut=Resolve JROC issues.NumberOut + 1:
                  Resolve JROC issues.WIP=Resolve JROC issues.WIP-1:NEXT(10640$);

66$         ASSIGN:      Hold for a year later in process.NumberIn=Hold for a year later in
process.NumberIn + 1:
                  Hold for a year later in process.WIP=Hold for a year later in process.WIP+1;
11272$      DELAY:       Triangular(270,300,365),,NVA;
11319$      ASSIGN:      Hold for a year later in process.NumberOut=Hold for a year later in
process.NumberOut + 1:
                  Hold for a year later in process.WIP=Hold for a year later in process.WIP-1:NEXT(67$);

60$         BRANCH,       1:
```

```
                    If,AFROC Count==1,11322$,Yes:
                    Else,11323$,Yes;
11322$     ASSIGN:     Check for previous path joint int preA.NumberOut True=
                    Check for previous path joint int preA.NumberOut True + 1:NEXT(74$);

11323$     ASSIGN:     Check for previous path joint int preA.NumberOut False=
                    Check for previous path joint int preA.NumberOut False + 1:NEXT(59$);

74$        ASSIGN:     Kill at AFROC joint interest PreA=TNOW:
                    TFIN=TNOW:NEXT(75$);

75$        TALLY:      Record 18,INT(SimTime),1:NEXT(58$);

58$        ASSIGN:     Death at AFROC joint int preA.NumberOut=Death at AFROC joint int
preA.NumberOut + 1;
11324$     DISPOSE:    Yes;

59$        ASSIGN:     AFROC Count=1:NEXT(57$);

57$        BRANCH,     1:
                    With,(99)/100,11325$,Yes:
                    Else,11326$,Yes;
11325$     ASSIGN:     Dead activity joint int preA.NumberOut True=Dead activity joint int
preA.NumberOut True + 1
                    :NEXT(74$);

11326$     ASSIGN:     Dead activity joint int preA.NumberOut False=Dead activity joint int
preA.NumberOut False + 1
                    :NEXT(51$);

53$        ASSIGN:     Hold for a year.NumberIn=Hold for a year.NumberIn + 1:
                    Hold for a year.WIP=Hold for a year.WIP+1;
11328$     DELAY:      Triangular(270,300,365),,NVA;
11375$     ASSIGN:     Hold for a year.NumberOut=Hold for a year.NumberOut + 1:
                    Hold for a year.WIP=Hold for a year.WIP-1:NEXT(54$);

10640$     ASSIGN:     Joint Interest preA.NumberOut=Joint Interest preA.NumberOut + 1:
                    Joint Interest preA.WIP=Joint Interest preA.WIP-1:NEXT(76$);


;
;
```

```
;     Model statements for module:  BasicProcess.Assign 11 (Record ICD time)
;
76$         ASSIGN:       ICD=1:
                       ICD Time=TNOW:NEXT(120$);


;
;
;     Model statements for module:  BasicProcess.Process 52 (Independent document preA)
;
103$        ASSIGN:       Independent document preA.NumberIn=Independent document preA.NumberIn
+ 1:
                       Independent document preA.WIP=Independent document preA.WIP+1:NEXT(104$);

104$        ASSIGN:       Draft document indep preA.NumberIn=Draft document indep preA.NumberIn +
1:
                       Draft document indep preA.WIP=Draft document indep preA.WIP+1;
11430$      DELAY:        Triangular(30,55,60),,VA;
11477$      ASSIGN:       Draft document indep preA.NumberOut=Draft document indep
preA.NumberOut + 1:
                       Draft document indep preA.WIP=Draft document indep preA.WIP-1:NEXT(105$);

105$        ASSIGN:       Air staff process indep preA.NumberIn=Air staff process indep preA.NumberIn +
1:
                       Air staff process indep preA.WIP=Air staff process indep preA.WIP+1;
11481$      DELAY:        Triangular(21,29,42),,VA;
11528$      ASSIGN:       Air staff process indep preA.NumberOut=Air staff process indep
preA.NumberOut + 1:
                       Air staff process indep preA.WIP=Air staff process indep preA.WIP-1:NEXT(106$);

106$        BRANCH,       1:
                       With,(95)/100,11531$,Yes:
                       Else,11532$,Yes;
11531$      ASSIGN:       Critical comments indep preA.NumberOut True=Critical comments indep
preA.NumberOut True + 1
                       :NEXT(107$);

11532$      ASSIGN:       Critical comments indep preA.NumberOut False=Critical comments indep
preA.NumberOut False + 1
                       :NEXT(110$);
```

```
107$      ASSIGN:      comment resolution indep preA.NumberIn=comment resolution indep
preA.NumberIn + 1:
                    comment resolution indep preA.WIP=comment resolution indep preA.WIP+1;
11534$    DELAY:       Triangular(15,30,45),,VA;
11581$    ASSIGN:      comment resolution indep preA.NumberOut=comment resolution indep
preA.NumberOut + 1:
                    comment resolution indep preA.WIP=comment resolution indep preA.WIP-
1:NEXT(108$);

108$      BRANCH,      1:
                    With,(99)/100,11584$,Yes:
                    Else,11585$,Yes;
11584$    ASSIGN:      MAJCOM approval indep preA.NumberOut True=MAJCOM approval indep
preA.NumberOut True + 1:NEXT(110$);

11585$    ASSIGN:      MAJCOM approval indep preA.NumberOut False=MAJCOM approval indep
preA.NumberOut False + 1
                    :NEXT(109$);

110$      ASSIGN:      AFROC Preparations indep preA.NumberIn=AFROC Preparations indep
preA.NumberIn + 1:
                    AFROC Preparations indep preA.WIP=AFROC Preparations indep preA.WIP+1;
11587$    DELAY:       Triangular(30,45,60),,VA;
11634$    ASSIGN:      AFROC Preparations indep preA.NumberOut=AFROC Preparations indep
preA.NumberOut + 1:
                    AFROC Preparations indep preA.WIP=AFROC Preparations indep preA.WIP-
1:NEXT(111$);

111$      BRANCH,      1:
                    With,(90)/100,11637$,Yes:
                    Else,11638$,Yes;
11637$    ASSIGN:      AFROC decision indep preA.NumberOut True=AFROC decision indep
preA.NumberOut True + 1:NEXT(116$);

11638$    ASSIGN:      AFROC decision indep preA.NumberOut False=AFROC decision indep
preA.NumberOut False + 1:NEXT(115$);

116$      BRANCH,      1:
                    With,(25)/100,11639$,Yes:
                    Else,11640$,Yes;
11639$    ASSIGN:      Post AFROC actions indep preA.NumberOut True=Post AFROC actions indep
preA.NumberOut True + 1
```

```
                    :NEXT(117$);

11640$      ASSIGN:      Post AFROC actions indep preA.NumberOut False=Post AFROC actions indep
preA.NumberOut False + 1
                    :NEXT(11426$);

117$        ASSIGN:      Accomplish Post AFROC actions indep preA.NumberIn=
                    Accomplish Post AFROC actions indep preA.NumberIn + 1:
                    Accomplish Post AFROC actions indep preA.WIP=Accomplish Post AFROC actions indep
preA.WIP+1;
11642$      DELAY:       Triangular(1,11,15),,VA;
11689$      ASSIGN:      Accomplish Post AFROC actions indep preA.NumberOut=
                    Accomplish Post AFROC actions indep preA.NumberOut + 1:
                    Accomplish Post AFROC actions indep preA.WIP=Accomplish Post AFROC actions indep
preA.WIP-1
                    :NEXT(11426$);

115$        BRANCH,      1:
                    If,AFROC Count==1,11692$,Yes:
                    Else,11693$,Yes;
11692$      ASSIGN:      Check for previous path indep preA.NumberOut True=
                    Check for previous path indep preA.NumberOut True + 1:NEXT(118$);

11693$      ASSIGN:      Check for previous path indep preA.NumberOut False=
                    Check for previous path indep preA.NumberOut False + 1:NEXT(114$);

118$        ASSIGN:      Kill time at AFROC indep PreA=TNOW:
                    TFIN=TNOW:NEXT(119$);

119$        TALLY:       Record 20,INT(SimTime),1:NEXT(113$);

113$        ASSIGN:      Death at AFROC indep preA.NumberOut=Death at AFROC indep preA.NumberOut
+ 1;
11694$      DISPOSE:     Yes;

114$        ASSIGN:      AFROC Count=1:NEXT(112$);

112$        BRANCH,      1:
                    With,(99)/100,11695$,Yes:
                    Else,11696$,Yes;
11695$      ASSIGN:      Dead activity indep preA.NumberOut True=Dead activity indep
preA.NumberOut True + 1:NEXT(118$);
```

```
11696$      ASSIGN:      Dead activity indep preA.NumberOut False=Dead activity indep
preA.NumberOut False + 1:NEXT(107$);

109$        ASSIGN:      Hold for a year later in process indep preA.NumberIn=
                  Hold for a year later in process indep preA.NumberIn + 1:
                  Hold for a year later in process indep preA.WIP=Hold for a year later in process indep
preA.WIP+1;
11698$      DELAY:       Triangular(270,300,365),,NVA;
11745$      ASSIGN:      Hold for a year later in process indep preA.NumberOut=
                  Hold for a year later in process indep preA.NumberOut + 1:
                  Hold for a year later in process indep preA.WIP=Hold for a year later in process indep
preA.WIP-1
                  :NEXT(110$);

11426$      ASSIGN:      Independent document preA.NumberOut=Independent document
preA.NumberOut + 1:
                  Independent document preA.WIP=Independent document preA.WIP-1:NEXT(76$);



;
;
;    Model statements for module:  BasicProcess.Process 39 (Joint Integration PreA)
;
77$         ASSIGN:      Joint Integration PreA.NumberIn=Joint Integration PreA.NumberIn + 1:
                  Joint Integration PreA.WIP=Joint Integration PreA.WIP+1:NEXT(78$);

78$         ASSIGN:      Draft document joint integ preA.NumberIn=Draft document joint integ
preA.NumberIn + 1:
                  Draft document joint integ preA.WIP=Draft document joint integ preA.WIP+1;
11800$      DELAY:       Triangular(30,55,60),,VA;
11847$      ASSIGN:      Draft document joint integ preA.NumberOut=Draft document joint integ
preA.NumberOut + 1:
                  Draft document joint integ preA.WIP=Draft document joint integ preA.WIP-1:NEXT(79$);

79$         ASSIGN:      Air staff process joint integ preA.NumberIn=Air staff process joint integ
preA.NumberIn + 1:
                  Air staff process joint integ preA.WIP=Air staff process joint integ preA.WIP+1;
11851$      DELAY:       Triangular(21,29,42),,VA;
11898$      ASSIGN:      Air staff process joint integ preA.NumberOut=Air staff process joint integ
preA.NumberOut + 1:
```

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                    Air staff process joint integ preA.WIP=Air staff process joint integ preA.WIP-
1:NEXT(80$);

80$         BRANCH,       1:
                    With,(95)/100,11901$,Yes:
                    Else,11902$,Yes;
11901$      ASSIGN:       Critical comments joint integ preA.NumberOut True=
                    Critical comments joint integ preA.NumberOut True + 1:NEXT(81$);

11902$      ASSIGN:       Critical comments joint integ preA.NumberOut False=
                    Critical comments joint integ preA.NumberOut False + 1:NEXT(83$);

81$         ASSIGN:       comment resolution joint integ preA.NumberIn=comment resolution joint integ
preA.NumberIn + 1:
                    comment resolution joint integ preA.WIP=comment resolution joint integ preA.WIP+1;
11904$      DELAY:        Triangular(15,30,45),,VA;
11951$      ASSIGN:       comment resolution joint integ preA.NumberOut=comment resolution joint
integ preA.NumberOut + 1:
                    comment resolution joint integ preA.WIP=comment resolution joint integ preA.WIP-
1:NEXT(82$);

82$         BRANCH,       1:
                    With,(99)/100,11954$,Yes:
                    Else,11955$,Yes;
11954$      ASSIGN:       MAJCOM approval joint integ preA.NumberOut True=MAJCOM approval joint
integ preA.NumberOut True + 1
                    :NEXT(83$);

11955$      ASSIGN:       MAJCOM approval joint integ preA.NumberOut False=
                    MAJCOM approval joint integ preA.NumberOut False + 1:NEXT(89$);

83$         BRANCH,       1:
                    With,(50)/100,11956$,Yes:
                    Else,11957$,Yes;
11956$      ASSIGN:       Document review phase joint integ preA.NumberOut True=
                    Document review phase joint integ preA.NumberOut True + 1:NEXT(84$);

11957$      ASSIGN:       Document review phase joint integ preA.NumberOut False=
                    Document review phase joint integ preA.NumberOut False + 1:NEXT(87$);

84$         ASSIGN:       Document review phase 2 flag level joint integ preA.NumberIn=
                    Document review phase 2 flag level joint integ preA.NumberIn + 1:
```

```
                    Document review phase 2 flag level joint integ preA.WIP=
                    Document review phase 2 flag level joint integ preA.WIP+1;
11959$    DELAY:     Triangular(21,34,42),,VA;
12006$    ASSIGN:    Document review phase 2 flag level joint integ preA.NumberOut=
                    Document review phase 2 flag level joint integ preA.NumberOut + 1:
                    Document review phase 2 flag level joint integ preA.WIP=
                    Document review phase 2 flag level joint integ preA.WIP-1:NEXT(85$);

85$       ASSIGN:    Resolving flag level comments joint integ preA.NumberIn=
                    Resolving flag level comments joint integ preA.NumberIn + 1:
                    Resolving flag level comments joint integ preA.WIP=
                    Resolving flag level comments joint integ preA.WIP+1;
12010$    DELAY:     Triangular(15,28,30),,VA;
12057$    ASSIGN:    Resolving flag level comments joint integ preA.NumberOut=
                    Resolving flag level comments joint integ preA.NumberOut + 1:
                    Resolving flag level comments joint integ preA.WIP=
                    Resolving flag level comments joint integ preA.WIP-1:NEXT(86$);

86$       BRANCH,    1:
                    With,(99)/100,12060$,Yes:
                    Else,12061$,Yes;
12060$    ASSIGN:    MAJCOM approval later on joint integ preA.NumberOut True=
                    MAJCOM approval later on joint integ preA.NumberOut True + 1:NEXT(87$);

12061$    ASSIGN:    MAJCOM approval later on joint integ preA.NumberOut False=
                    MAJCOM approval later on joint integ preA.NumberOut False + 1:NEXT(90$);

87$       ASSIGN:    Interoperability Certification joint integ preA.NumberIn=
                    Interoperability Certification joint integ preA.NumberIn + 1:
                    Interoperability Certification joint integ preA.WIP=
                    Interoperability Certification joint integ preA.WIP+1;
12063$    DELAY:     Triangular(10,15,20),,VA;
12110$    ASSIGN:    Interoperability Certification joint integ preA.NumberOut=
                    Interoperability Certification joint integ preA.NumberOut + 1:
                    Interoperability Certification joint integ preA.WIP=
                    Interoperability Certification joint integ preA.WIP-1:NEXT(88$);

88$       ASSIGN:    AFROC Preparations joint integ preA.NumberIn=AFROC Preparations joint integ
preA.NumberIn + 1:
                    AFROC Preparations joint integ preA.WIP=AFROC Preparations joint integ preA.WIP+1;
12114$    DELAY:     Triangular(30,45,60),,VA;
```

```
12161$     ASSIGN:     AFROC Preparations joint integ preA.NumberOut=AFROC Preparations joint
integ preA.NumberOut + 1:
                AFROC Preparations joint integ preA.WIP=AFROC Preparations joint integ preA.WIP-
1:NEXT(91$);

91$        BRANCH,     1:
                With,(90)/100,12164$,Yes:
                Else,12165$,Yes;
12164$     ASSIGN:     AFROC decision joint integ preA.NumberOut True=AFROC decision joint integ
preA.NumberOut True + 1
                :NEXT(96$);

12165$     ASSIGN:     AFROC decision joint integ preA.NumberOut False=AFROC decision joint integ
preA.NumberOut False + 1
                :NEXT(95$);

96$        BRANCH,     1:
                With,(25)/100,12166$,Yes:
                Else,12167$,Yes;
12166$     ASSIGN:     Post AFROC actions joint integ preA.NumberOut True=
                Post AFROC actions joint integ preA.NumberOut True + 1:NEXT(97$);

12167$     ASSIGN:     Post AFROC actions joint integ preA.NumberOut False=
                Post AFROC actions joint integ preA.NumberOut False + 1:NEXT(98$);

97$        ASSIGN:     Accomplish Post AFROC actions joint integ preA.NumberIn=
                Accomplish Post AFROC actions joint integ preA.NumberIn + 1:
                Accomplish Post AFROC actions joint integ preA.WIP=
                Accomplish Post AFROC actions joint integ preA.WIP+1;
12169$     DELAY:      Triangular(1,11,15),,VA;
12216$     ASSIGN:     Accomplish Post AFROC actions joint integ preA.NumberOut=
                Accomplish Post AFROC actions joint integ preA.NumberOut + 1:
                Accomplish Post AFROC actions joint integ preA.WIP=
                Accomplish Post AFROC actions joint integ preA.WIP-1:NEXT(98$);

98$        ASSIGN:     document signing and validation joint integ preA.NumberIn=
                document signing and validation joint integ preA.NumberIn + 1:
                document signing and validation joint integ preA.WIP=
                document signing and validation joint integ preA.WIP+1;
12220$     DELAY:      Triangular(14,26,30),,VA;
12267$     ASSIGN:     document signing and validation joint integ preA.NumberOut=
                document signing and validation joint integ preA.NumberOut + 1:
```

```
                document signing and validation joint integ preA.WIP=
                document signing and validation joint integ preA.WIP-1:NEXT(99$);

99$       BRANCH,     1:
                With,(99)/100,12270$,Yes:
                Else,12271$,Yes;
12270$    ASSIGN:     Final AFROC approval joint integ preA.NumberOut True=
                Final AFROC approval joint integ preA.NumberOut True + 1:NEXT(11796$);

12271$    ASSIGN:     Final AFROC approval joint integ preA.NumberOut False=
                Final AFROC approval joint integ preA.NumberOut False + 1:NEXT(100$);

100$      ASSIGN:     Final AFROC resolution joint integ preA.NumberIn=
                Final AFROC resolution joint integ preA.NumberIn + 1:
                Final AFROC resolution joint integ preA.WIP=Final AFROC resolution joint integ
preA.WIP+1;
12273$    DELAY:      Triangular(42,48,60),,VA;
12320$    ASSIGN:     Final AFROC resolution joint integ preA.NumberOut=
                Final AFROC resolution joint integ preA.NumberOut + 1:
                Final AFROC resolution joint integ preA.WIP=Final AFROC resolution joint integ
preA.WIP-1
                :NEXT(11796$);

95$       BRANCH,     1:
                If,AFROC Count==1,12323$,Yes:
                Else,12324$,Yes;
12323$    ASSIGN:     Check for previous path joint integ preA.NumberOut True=
                Check for previous path joint integ preA.NumberOut True + 1:NEXT(101$);

12324$    ASSIGN:     Check for previous path joint integ preA.NumberOut False=
                Check for previous path joint integ preA.NumberOut False + 1:NEXT(94$);

101$      ASSIGN:     Kill time at AFROC joint integ PreA=TNOW:
                TFIN=TNOW:NEXT(102$);

102$      TALLY:      Record 19,INT(SimTime),1:NEXT(93$);

93$       ASSIGN:     Death at AFROC joint integ preA.NumberOut=Death at AFROC joint integ
preA.NumberOut + 1;
12325$    DISPOSE:    Yes;

94$       ASSIGN:     AFROC Count=1:NEXT(92$);
```

```
92$         BRANCH,       1:
                 With,(99)/100,12326$,Yes:
                 Else,12327$,Yes;
12326$      ASSIGN:       Dead activity joint integ preA.NumberOut True=Dead activity joint integ
preA.NumberOut True + 1
                 :NEXT(101$);

12327$      ASSIGN:       Dead activity joint integ preA.NumberOut False=Dead activity joint integ
preA.NumberOut False + 1
                 :NEXT(81$);

90$         ASSIGN:       Hold for a year later in process 2nd time joint integ preA.NumberIn=
                 Hold for a year later in process 2nd time joint integ preA.NumberIn + 1:
                 Hold for a year later in process 2nd time joint integ preA.WIP=
                 Hold for a year later in process 2nd time joint integ preA.WIP+1;
12329$      DELAY:        Triangular(270,300,365),,NVA;
12376$      ASSIGN:       Hold for a year later in process 2nd time joint integ preA.NumberOut=
                 Hold for a year later in process 2nd time joint integ preA.NumberOut + 1:
                 Hold for a year later in process 2nd time joint integ preA.WIP=
                 Hold for a year later in process 2nd time joint integ preA.WIP-1:NEXT(87$);

89$         ASSIGN:       Hold for a year later in process joint integ preA.NumberIn=
                 Hold for a year later in process joint integ preA.NumberIn + 1:
                 Hold for a year later in process joint integ preA.WIP=
                 Hold for a year later in process joint integ preA.WIP+1;
12380$      DELAY:        Triangular(270,300,365),,NVA;
12427$      ASSIGN:       Hold for a year later in process joint integ preA.NumberOut=
                 Hold for a year later in process joint integ preA.NumberOut + 1:
                 Hold for a year later in process joint integ preA.WIP=
                 Hold for a year later in process joint integ preA.WIP-1:NEXT(83$);

11796$      ASSIGN:       Joint Integration PreA.NumberOut=Joint Integration PreA.NumberOut + 1:
                 Joint Integration PreA.WIP=Joint Integration PreA.WIP-1:NEXT(76$);


;
;
;    Model statements for module:  BasicProcess.Decide 14 (Check Condition)
;
32$         BRANCH,       1:
                 If,RequirementPathTrack>=1,12430$,Yes:
```

```
                    Else,12431$,Yes;
12430$      ASSIGN:      Check Condition.NumberOut True=Check Condition.NumberOut True +
1:NEXT(666$);

12431$      ASSIGN:      Check Condition.NumberOut False=Check Condition.NumberOut False +
1:NEXT(31$);


;
;
;    Model statements for module:  BasicProcess.Record 10 (Record 10)
;
666$        TALLY:       Record 10,INT(SimTime),1:NEXT(381$);


;
;
;    Model statements for module:  BasicProcess.Assign 77 (End Simulation 8)
;
381$        ASSIGN:      Reject in formal review preA=TNOW:
                    TFIN=TNOW:NEXT(382$);


;
;
;    Model statements for module:  BasicProcess.Dispose 32 (Archive for rejected ideas in formal review)
;
382$        ASSIGN:      Archive for rejected ideas in formal review.NumberOut=
                    Archive for rejected ideas in formal review.NumberOut + 1;
12432$      DISPOSE:     No;


;
;
;    Model statements for module:  BasicProcess.Assign 1 (Add counter through feedback path)
;
31$         ASSIGN:      RequirementPathTrack=RequirementPathTrack + 1:NEXT(30$);


;
;
;    Model statements for module:  BasicProcess.Decide 13 (Decision to Repursue)
```

```
;
30$         BRANCH,      1:
                    With,(85)/100,12433$,Yes:
                    Else,12434$,Yes;
12433$      ASSIGN:      Decision to Repursue.NumberOut True=Decision to Repursue.NumberOut True
+ 1:NEXT(34$);

12434$      ASSIGN:      Decision to Repursue.NumberOut False=Decision to Repursue.NumberOut False
+ 1:NEXT(665$);


;
;
;    Model statements for module:  BasicProcess.Process 16 (Update Briefing Materials)
;
34$         ASSIGN:      Update Briefing Materials.NumberIn=Update Briefing Materials.NumberIn + 1:
                    Update Briefing Materials.WIP=Update Briefing Materials.WIP+1;
12436$      DELAY:       Triangular(10,35,40),,VA;
12483$      ASSIGN:      Update Briefing Materials.NumberOut=Update Briefing Materials.NumberOut +
1:
                    Update Briefing Materials.WIP=Update Briefing Materials.WIP-1:NEXT(19$);


;
;
;    Model statements for module:  BasicProcess.Record 9 (Record 9)
;
665$        TALLY:       Record 9,INT(SimTime),1:NEXT(381$);


;
;
;    Model statements for module:  BasicProcess.Process 12 (Wait until next year)
;
21$         ASSIGN:      Wait until next year.NumberIn=Wait until next year.NumberIn + 1:
                    Wait until next year.WIP=Wait until next year.WIP+1;
12487$      DELAY:       Triangular(180,250,270),,NVA;
12534$      ASSIGN:      Wait until next year.NumberOut=Wait until next year.NumberOut + 1:
                    Wait until next year.WIP=Wait until next year.WIP-1:NEXT(22$);


;
```

```
;
;    Model statements for module:  BasicProcess.Assign 78 (End Simulation 9)
;
383$         ASSIGN:       Waiting Period End=TNOW:
                         TFIN=TNOW:NEXT(676$);


;
;
;    Model statements for module:  BasicProcess.Record 35 (Record 35)
;
676$         TALLY:        Record 35,INT(SimTime),1:NEXT(384$);


;
;
;    Model statements for module:  BasicProcess.Dispose 33 (End after waiting period)
;
384$         ASSIGN:       End after waiting period.NumberOut=End after waiting period.NumberOut + 1;
12537$       DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Process 10 (Route to Advanced Concepts)
;
16$          ASSIGN:       Route to Advanced Concepts.NumberIn=Route to Advanced Concepts.NumberIn +
1:
                         Route to Advanced Concepts.WIP=Route to Advanced Concepts.WIP+1;
12539$       DELAY:        Triangular(3,7.5,12),,Tran;
12586$       ASSIGN:       Route to Advanced Concepts.NumberOut=Route to Advanced
Concepts.NumberOut + 1:
                         Route to Advanced Concepts.WIP=Route to Advanced Concepts.WIP-1:NEXT(13$);


;
;
;    Model statements for module:  BasicProcess.Create 4 (Program review condition)
;

12589$       CREATE,       1,DaysToBaseTime(0.00),ProgramreviewpreB:
```

```
                    DaysToBaseTime((ACAT level==1) *TRIA( 90 , 105 , 120 ) + (ACAT level ==2) *
TRIA(160,180,200)+ (ACAT level ==3) * TRIA(160,180,200))
                    :NEXT(12590$);

12590$     ASSIGN:     Program review condition.NumberOut=Program review condition.NumberOut +
1:NEXT(373$);


;
;
;    Model statements for module:  BasicProcess.Decide 144 (Contract started PreB)
;
373$       BRANCH,     1:
                    If,contract start==1,12593$,Yes:
                    Else,12594$,Yes;
12593$     ASSIGN:     Contract started PreB.NumberOut True=Contract started PreB.NumberOut True
+ 1:NEXT(296$);

12594$     ASSIGN:     Contract started PreB.NumberOut False=Contract started PreB.NumberOut
False + 1:NEXT(374$);


;
;
;    Model statements for module:  BasicProcess.Decide 117 (Program Review OK)
;
296$       BRANCH,     1:
                    With,(95)/100,12595$,Yes:
                    Else,12596$,Yes;
12595$     ASSIGN:     Program Review OK.NumberOut True=Program Review OK.NumberOut True +
1:NEXT(297$);

12596$     ASSIGN:     Program Review OK.NumberOut False=Program Review OK.NumberOut False +
1:NEXT(298$);


;
;
;    Model statements for module:  BasicProcess.Decide 118 (Funds Redirected)
;
297$       BRANCH,     1:
                    With,(20)/100,12597$,Yes:
```

```
                Else,12598$,Yes;
12597$    ASSIGN:    Funds Redirected.NumberOut True=Funds Redirected.NumberOut True +
1:NEXT(298$);

12598$    ASSIGN:    Funds Redirected.NumberOut False=Funds Redirected.NumberOut False +
1:NEXT(299$);


;
;
;   Model statements for module:  BasicProcess.Process 149 (Prepare Courses of Action PreB)
;
298$      ASSIGN:    Prepare Courses of Action PreB.NumberIn=Prepare Courses of Action
PreB.NumberIn + 1:
                Prepare Courses of Action PreB.WIP=Prepare Courses of Action PreB.WIP+1;
12600$    DELAY:     Triangular(5,8,10),,VA;
12647$    ASSIGN:    Prepare Courses of Action PreB.NumberOut=Prepare Courses of Action
PreB.NumberOut + 1:
                Prepare Courses of Action PreB.WIP=Prepare Courses of Action PreB.WIP-1:NEXT(300$);


;
;
;   Model statements for module:  BasicProcess.Decide 121 (Determine path for process flow Scope
Growth PreB)
;
300$      BRANCH,    1:
                With,(80)/100,12650$,Yes:
                Else,12651$,Yes;
12650$    ASSIGN:    Determine path for process flow Scope Growth PreB.NumberOut True=
                Determine path for process flow Scope Growth PreB.NumberOut True + 1:NEXT(301$);

12651$    ASSIGN:    Determine path for process flow Scope Growth PreB.NumberOut False=
                Determine path for process flow Scope Growth PreB.NumberOut False + 1:NEXT(307$);


;
;
;   Model statements for module:  BasicProcess.Decide 122 (Seek funds PreB)
;
301$      BRANCH,    1:
                With,(30)/100,12652$,Yes:
```

```
                    Else,12653$,Yes;
12652$      ASSIGN:      Seek funds PreB.NumberOut True=Seek funds PreB.NumberOut True +
1:NEXT(372$);

12653$      ASSIGN:      Seek funds PreB.NumberOut False=Seek funds PreB.NumberOut False +
1:NEXT(308$);


;
;
;     Model statements for module:  BasicProcess.Process 177 (PEM or other staff find money PreB)
;
372$        ASSIGN:      PEM or other staff find money PreB.NumberIn=PEM or other staff find money
PreB.NumberIn + 1:
                    PEM or other staff find money PreB.WIP=PEM or other staff find money PreB.WIP+1;
12655$      DELAY:       (ACAT level==1)*TRIA(14,83,180)+(ACAT level==2)*TRIA(14,160,180)+(ACAT
level==3)*TRIA(14,160,180),,
                    VA;
12702$      ASSIGN:      PEM or other staff find money PreB.NumberOut=PEM or other staff find money
PreB.NumberOut + 1:
                    PEM or other staff find money PreB.WIP=PEM or other staff find money PreB.WIP-
1:NEXT(302$);


;
;
;     Model statements for module:  BasicProcess.Decide 123 (Obtain funds in a timely manner PreB)
;
302$        BRANCH,      1:
                    With,(65)/100,12705$,Yes:
                    Else,12706$,Yes;
12705$      ASSIGN:      Obtain funds in a timely manner PreB.NumberOut True=
                    Obtain funds in a timely manner PreB.NumberOut True + 1:NEXT(305$);

12706$      ASSIGN:      Obtain funds in a timely manner PreB.NumberOut False=
                    Obtain funds in a timely manner PreB.NumberOut False + 1:NEXT(306$);


;
;
;     Model statements for module:  BasicProcess.Assign 43 (determine good funding quality preB)
;
```

```
305$        ASSIGN:      Schedule quality=0.045:
                    funding quality=0.045:NEXT(303$);


;
;
;    Model statements for module:  BasicProcess.Process 156 (Change Contract or Rescope contract
PreB)
;
303$        ASSIGN:      Change Contract or Rescope contract PreB.NumberIn=
                    Change Contract or Rescope contract PreB.NumberIn + 1:
                    Change Contract or Rescope contract PreB.WIP=Change Contract or Rescope contract
PreB.WIP+1;
12708$      DELAY:       Triangular(15,20,60),,VA;
12755$      ASSIGN:      Change Contract or Rescope contract PreB.NumberOut=
                    Change Contract or Rescope contract PreB.NumberOut + 1:
                    Change Contract or Rescope contract PreB.WIP=Change Contract or Rescope contract
PreB.WIP-1
                    :NEXT(304$);


;
;
;    Model statements for module:  BasicProcess.Assign 42 (Set cost and schedule penalties)
;
304$        ASSIGN:      contract cost=contract cost + (contract cost * funding quality):
                    TD Contract length=TD Contract length + (TD Contract length*schedule quality):
                    TD Contract End Date=TD Contract Start+TD Contract length:NEXT(364$);


;
;
;    Model statements for module:  BasicProcess.Dispose 27 (End of Program Management and
Oversight loop)
;
364$        ASSIGN:      End of Program Management and Oversight loop.NumberOut=
                    End of Program Management and Oversight loop.NumberOut + 1;
12758$      DISPOSE:     No;


;
;
```

```
;     Model statements for module:  BasicProcess.Assign 44 (determine poor funding quality preB)
;
306$        ASSIGN:       Schedule quality=0.055:
                    funding quality=0.055:NEXT(303$);



;
;
;     Model statements for module:  BasicProcess.Assign 46 (Determine quality values preB)
;
308$        ASSIGN:       Schedule quality=0.05:
                    funding quality=0.05:NEXT(303$);



;
;
;     Model statements for module:  BasicProcess.Decide 126 (Funding problem Contract Change
Required preB)
;
307$        BRANCH,       1:
                    With,(40)/100,12759$,Yes:
                    Else,12760$,Yes;
12759$       ASSIGN:       Funding problem Contract Change Required preB.NumberOut True=
                    Funding problem Contract Change Required preB.NumberOut True + 1:NEXT(308$);

12760$       ASSIGN:       Funding problem Contract Change Required preB.NumberOut False=
                    Funding problem Contract Change Required preB.NumberOut False + 1:NEXT(363$);



;
;
;     Model statements for module:  BasicProcess.Dispose 26 (End of contract change path)
;
363$        ASSIGN:       End of contract change path.NumberOut=End of contract change
path.NumberOut + 1;
12761$       DISPOSE:      No;



;
;
;     Model statements for module:  BasicProcess.Dispose 24 (End of Program Review Loop)
;
```

```
299$       ASSIGN:      End of Program Review Loop.NumberOut=End of Program Review
Loop.NumberOut + 1;
12762$     DISPOSE:     No;


;
;
;    Model statements for module:  BasicProcess.Dispose 30 (Dispose of program review prior to need)
;
374$       ASSIGN:      Dispose of program review prior to need.NumberOut=
                  Dispose of program review prior to need.NumberOut + 1;
12763$     DISPOSE:     No;


;
;
;    Model statements for module:  BasicProcess.Create 5 (Uncertainty generator for Event Happens
PreB)
;

12764$     CREATE,      1,DaysToBaseTime(0),Event Happens:DaysToBaseTime(TRIA( 30 , 60 , 90
)):NEXT(12765$);

12765$     ASSIGN:      Uncertainty generator for Event Happens PreB.NumberOut=
                  Uncertainty generator for Event Happens PreB.NumberOut + 1:NEXT(375$);


;
;
;    Model statements for module:  BasicProcess.Decide 145 (Event Happens PreB)
;
375$       BRANCH,      1:
                  If,contract start==1,12768$,Yes:
                  Else,12769$,Yes;
12768$     ASSIGN:      Event Happens PreB.NumberOut True=Event Happens PreB.NumberOut True +
1:NEXT(314$);

12769$     ASSIGN:      Event Happens PreB.NumberOut False=Event Happens PreB.NumberOut False +
1:NEXT(376$);


;
```

```
;
;     Model statements for module:  BasicProcess.Decide 132 (Scope Growth Technical Problems PreB)
;
314$         BRANCH,       1:
                      With,(20)/100,12770$,Yes:
                      Else,12771$,Yes;
12770$       ASSIGN:       Scope Growth Technical Problems PreB.NumberOut True=
                      Scope Growth Technical Problems PreB.NumberOut True + 1:NEXT(315$);

12771$       ASSIGN:       Scope Growth Technical Problems PreB.NumberOut False=
                      Scope Growth Technical Problems PreB.NumberOut False + 1:NEXT(317$);



;
;
;     Model statements for module:  BasicProcess.Separate 12 (Separate for logic testing PreB)
;
315$         DUPLICATE,     100 - 0:
                      1,12774$,0:NEXT(12773$);

12773$       ASSIGN:       Separate for logic testing PreB.NumberOut Orig=Separate for logic testing
PreB.NumberOut Orig + 1
                      :NEXT(298$);

12774$       ASSIGN:       Separate for logic testing PreB.NumberOut Dup=Separate for logic testing
PreB.NumberOut Dup + 1
                      :NEXT(317$);



;
;
;     Model statements for module:  BasicProcess.Decide 134 (Logic check for ACAT level PreB)
;
317$         BRANCH,       1:
                      If,ACAT Level==1,12775$,Yes:
                      Else,12776$,Yes;
12775$       ASSIGN:       Logic check for ACAT level PreB.NumberOut True=Logic check for ACAT level
PreB.NumberOut True + 1
                      :NEXT(316$);

12776$       ASSIGN:       Logic check for ACAT level PreB.NumberOut False=Logic check for ACAT level
PreB.NumberOut False + 1
```

```
                    :NEXT(318$);


;
;
;     Model statements for module:  BasicProcess.Decide 133 (Begin Testing PreB)
;
316$         BRANCH,       1:
                    If,TNOW.GE. ( (0.75*TD original contract length )  + TD Contract Start ),12777$,Yes:
                    Else,12778$,Yes;
12777$       ASSIGN:       Begin Testing PreB.NumberOut True=Begin Testing PreB.NumberOut True +
1:NEXT(379$);

12778$       ASSIGN:       Begin Testing PreB.NumberOut False=Begin Testing PreB.NumberOut False +
1:NEXT(319$);


;
;
;     Model statements for module:  BasicProcess.Assign 75 (Declare start of T and E PreB)
;
379$         ASSIGN:       T and E Start PreB=1:NEXT(319$);


;
;
;     Model statements for module:  BasicProcess.Decide 136 (Query contract elapsed time 6 months to
completion PreB)
;
319$         BRANCH,       1:
                    If,TNOW.GE. ( TD Contract End Date-180) || TD Contract End Date Near,12779$,Yes:
                    Else,12780$,Yes;
12779$       ASSIGN:       Query contract elapsed time 6 months to completion PreB.NumberOut True=
                    Query contract elapsed time 6 months to completion PreB.NumberOut True +
1:NEXT(320$);

12780$       ASSIGN:       Query contract elapsed time 6 months to completion PreB.NumberOut False=
                    Query contract elapsed time 6 months to completion PreB.NumberOut False +
1:NEXT(322$);


;
```

```
;
;    Model statements for module:  BasicProcess.Decide 137 (contractor loop PreB)
;
320$         BRANCH,       1:
                     If,contractor loop==0,12781$,Yes:
                     Else,12782$,Yes;
12781$       ASSIGN:       contractor loop PreB.NumberOut True=contractor loop PreB.NumberOut True +
1:NEXT(378$);

12782$       ASSIGN:       contractor loop PreB.NumberOut False=contractor loop PreB.NumberOut False
+ 1:NEXT(322$);


;
;
;    Model statements for module:  BasicProcess.Assign 73 (Declare Acq Planning and Costing to Begin)
;
378$         ASSIGN:       Acq Plan PreB=1:
                     Costing Begin PreB=1:NEXT(321$);


;
;
;    Model statements for module:  BasicProcess.Assign 49 (Contractor loop counter preB)
;
321$         ASSIGN:       contractor loop=contractor loop +1:NEXT(322$);


;
;
;    Model statements for module:  BasicProcess.Decide 138 (Contract complete PreB)
;
322$         BRANCH,       1:
                     If,TNOW.GE.TD Contract End Date || End TD contract,12783$,Yes:
                     Else,12784$,Yes;
12783$       ASSIGN:       Contract complete PreB.NumberOut True=Contract complete PreB.NumberOut
True + 1:NEXT(644$);

12784$       ASSIGN:       Contract complete PreB.NumberOut False=Contract complete PreB.NumberOut
False + 1:NEXT(366$);
```

```
;
;
;    Model statements for module:  BasicProcess.Decide 225 (First time to contract completion?)
;
644$        BRANCH,       1:
                  If,End TD contract==0,12785$,Yes:
                  Else,12786$,Yes;
12785$      ASSIGN:       First time to contract completion?.NumberOut True=
                  First time to contract completion?.NumberOut True + 1:NEXT(645$);

12786$      ASSIGN:       First time to contract completion?.NumberOut False=
                  First time to contract completion?.NumberOut False + 1:NEXT(365$);



;
;
;    Model statements for module:  BasicProcess.Assign 140 (Assign final contract cost)
;
645$        ASSIGN:       Final TD contract cost=contract cost:
                  End TD contract=1:NEXT(365$);



;
;
;    Model statements for module:  BasicProcess.Dispose 28 (Completion of contract PreB)
;
365$        ASSIGN:       Completion of contract PreB.NumberOut=Completion of contract
PreB.NumberOut + 1;
12787$      DISPOSE:      No;



;
;
;    Model statements for module:  BasicProcess.Dispose 29 (End of Event Happens Loop PreB)
;
366$        ASSIGN:       End of Event Happens Loop PreB.NumberOut=End of Event Happens Loop
PreB.NumberOut + 1;
12788$      DISPOSE:      No;



;
;
```

```
;     Model statements for module:  BasicProcess.Decide 135 (Begin Testing ACAT II or III PreB)
;
318$         BRANCH,        1:
                     If,TNOW.GE.((0.85*TD original contract length )  + TD Contract Start),12789$,Yes:
                     Else,12790$,Yes;
12789$       ASSIGN:       Begin Testing ACAT II or III PreB.NumberOut True=
                     Begin Testing ACAT II or III PreB.NumberOut True + 1:NEXT(379$);

12790$       ASSIGN:       Begin Testing ACAT II or III PreB.NumberOut False=
                     Begin Testing ACAT II or III PreB.NumberOut False + 1:NEXT(319$);



;
;
;     Model statements for module:  BasicProcess.Dispose 31 (Dispose of event happens prior to need)
;
376$         ASSIGN:       Dispose of event happens prior to need.NumberOut=
                     Dispose of event happens prior to need.NumberOut + 1;
12791$       DISPOSE:      No;



;
;
;     Model statements for module:  BasicProcess.Create 6 (Program review condition PreC)
;

12792$       CREATE,       1,DaysToBaseTime(0),ProgramreviewpreC:
                     DaysToBaseTime((ACAT level==1) *TRIA( 90 , 105 , 120 ) + (ACAT level ==2) *
TRIA(160,180,200)+ (ACAT level ==3) * TRIA(160,180,200))
                     :NEXT(12793$);

12793$       ASSIGN:       Program review condition PreC.NumberOut=Program review condition
PreC.NumberOut + 1:NEXT(569$);



;
;
;     Model statements for module:  BasicProcess.Decide 205 (Contract started PreC)
;
569$         BRANCH,        1:
                     If,Contract Start PreC==1,12796$,Yes:
                     Else,12797$,Yes;
```

```
12796$    ASSIGN:    Contract started PreC.NumberOut True=Contract started PreC.NumberOut True
+ 1:NEXT(513$);

12797$    ASSIGN:    Contract started PreC.NumberOut False=Contract started PreC.NumberOut
False + 1:NEXT(570$);


;
;
;    Model statements for module:  BasicProcess.Decide 187 (Program Review OK PreC)
;
513$     BRANCH,    1:
              With,(95)/100,12798$,Yes:
              Else,12799$,Yes;
12798$    ASSIGN:    Program Review OK PreC.NumberOut True=Program Review OK
PreC.NumberOut True + 1:NEXT(514$);

12799$    ASSIGN:    Program Review OK PreC.NumberOut False=Program Review OK
PreC.NumberOut False + 1:NEXT(515$);


;
;
;    Model statements for module:  BasicProcess.Decide 188 (Funds Redirected PreC)
;
514$     BRANCH,    1:
              With,(20)/100,12800$,Yes:
              Else,12801$,Yes;
12800$    ASSIGN:    Funds Redirected PreC.NumberOut True=Funds Redirected PreC.NumberOut
True + 1:NEXT(515$);

12801$    ASSIGN:    Funds Redirected PreC.NumberOut False=Funds Redirected PreC.NumberOut
False + 1:NEXT(516$);


;
;
;    Model statements for module:  BasicProcess.Process 232 (Prepare Courses of Action PreC)
;
515$     ASSIGN:    Prepare Courses of Action PreC.NumberIn=Prepare Courses of Action
PreC.NumberIn + 1:
              Prepare Courses of Action PreC.WIP=Prepare Courses of Action PreC.WIP+1;
```

```
12803$       DELAY:       Triangular(5,8,10),,VA;
12850$       ASSIGN:       Prepare Courses of Action PreC.NumberOut=Prepare Courses of Action
PreC.NumberOut + 1:
                    Prepare Courses of Action PreC.WIP=Prepare Courses of Action PreC.WIP-1:NEXT(517$);


;
;
;     Model statements for module:  BasicProcess.Decide 189 (Determine path for process flow Scope
Growth PreC)
;
517$         BRANCH,       1:
                    With,(80)/100,12853$,Yes:
                    Else,12854$,Yes;
12853$       ASSIGN:       Determine path for process flow Scope Growth PreC.NumberOut True=
                    Determine path for process flow Scope Growth PreC.NumberOut True + 1:NEXT(518$);

12854$       ASSIGN:       Determine path for process flow Scope Growth PreC.NumberOut False=
                    Determine path for process flow Scope Growth PreC.NumberOut False + 1:NEXT(524$);


;
;
;     Model statements for module:  BasicProcess.Decide 190 (Seek funds PreC)
;
518$         BRANCH,       1:
                    With,(30)/100,12855$,Yes:
                    Else,12856$,Yes;
12855$       ASSIGN:       Seek funds PreC.NumberOut True=Seek funds PreC.NumberOut True +
1:NEXT(568$);

12856$       ASSIGN:       Seek funds PreC.NumberOut False=Seek funds PreC.NumberOut False +
1:NEXT(525$);


;
;
;     Model statements for module:  BasicProcess.Process 251 (PEM or other staff find money PreC)
;
568$         ASSIGN:       PEM or other staff find money PreC.NumberIn=PEM or other staff find money
PreC.NumberIn + 1:
                    PEM or other staff find money PreC.WIP=PEM or other staff find money PreC.WIP+1;
```

```
12858$      DELAY:      (ACAT level==1)*TRIA(14,83,180)+(ACAT level==2)*TRIA(14,160,180)+(ACAT
level==3)*TRIA(14,160,180),,
                        VA;
12905$      ASSIGN:     PEM or other staff find money PreC.NumberOut=PEM or other staff find money
PreC.NumberOut + 1:
                        PEM or other staff find money PreC.WIP=PEM or other staff find money PreC.WIP-
1:NEXT(519$);


;
;
;     Model statements for module:  BasicProcess.Decide 191 (Obtain funds in a timely manner PreC)
;
519$        BRANCH,     1:
                        With,(65)/100,12908$,Yes:
                        Else,12909$,Yes;
12908$      ASSIGN:     Obtain funds in a timely manner PreC.NumberOut True=
                        Obtain funds in a timely manner PreC.NumberOut True + 1:NEXT(522$);

12909$      ASSIGN:     Obtain funds in a timely manner PreC.NumberOut False=
                        Obtain funds in a timely manner PreC.NumberOut False + 1:NEXT(523$);


;
;
;     Model statements for module:  BasicProcess.Assign 95 (determine good funding quality preC)
;
522$        ASSIGN:     Schedule quality PreC=.045:
                        funding quality PreC=.045:NEXT(520$);


;
;
;     Model statements for module:  BasicProcess.Process 233 (Change Contract or Rescope contract
PreC)
;
520$        ASSIGN:     Change Contract or Rescope contract PreC.NumberIn=
                        Change Contract or Rescope contract PreC.NumberIn + 1:
                        Change Contract or Rescope contract PreC.WIP=Change Contract or Rescope contract
PreC.WIP+1;
12911$      DELAY:      Triangular(15,20,60),,VA;
12958$      ASSIGN:     Change Contract or Rescope contract PreC.NumberOut=
```

```
                    Change Contract or Rescope contract PreC.NumberOut + 1:
                    Change Contract or Rescope contract PreC.WIP=Change Contract or Rescope contract
PreC.WIP-1
                    :NEXT(521$);


;
;
;     Model statements for module:  BasicProcess.Assign 94 (Set cost and schedule penalties PreC)
;
521$          ASSIGN:       SDD contract cost=SDD contract cost + (SDD contract cost * funding quality PreC):
                    SDD contract length=SDD contract length + (SDD contract length*schedule quality PreC):
                    SDD Contract End Date=SDD Contract Start+SDD contract length:NEXT(560$);


;
;
;     Model statements for module:  BasicProcess.Dispose 42 (End of Program Management and
Oversight loop PreC)
;
560$          ASSIGN:       End of Program Management and Oversight loop PreC.NumberOut=
                    End of Program Management and Oversight loop PreC.NumberOut + 1;
12961$        DISPOSE:      No;


;
;
;     Model statements for module:  BasicProcess.Assign 96 (determine poor funding quality preC)
;
523$          ASSIGN:       Schedule quality PreC=.055:
                    funding quality PreC=.055:NEXT(520$);


;
;
;     Model statements for module:  BasicProcess.Assign 97 (Determine quality values preC)
;
525$          ASSIGN:       Schedule quality PreC=.05:
                    funding quality PreC=.05:NEXT(520$);


;
```

```
;
;    Model statements for module:  BasicProcess.Decide 192 (Funding problem Contract Change
Required preC)
;
524$        BRANCH,       1:
                 With,(40)/100,12962$,Yes:
                 Else,12963$,Yes;
12962$      ASSIGN:      Funding problem Contract Change Required preC.NumberOut True=
                 Funding problem Contract Change Required preC.NumberOut True + 1:NEXT(525$);

12963$      ASSIGN:      Funding problem Contract Change Required preC.NumberOut False=
                 Funding problem Contract Change Required preC.NumberOut False + 1:NEXT(559$);



;
;
;    Model statements for module:  BasicProcess.Dispose 41 (End of contract change path PreC)
;
559$        ASSIGN:      End of contract change path PreC.NumberOut=End of contract change path
PreC.NumberOut + 1;
12964$      DISPOSE:     No;



;
;
;    Model statements for module:  BasicProcess.Dispose 39 (End of Program Review Loop PreC)
;
516$        ASSIGN:      End of Program Review Loop PreC.NumberOut=End of Program Review Loop
PreC.NumberOut + 1;
12965$      DISPOSE:     No;



;
;
;    Model statements for module:  BasicProcess.Dispose 45 (Dispose of program review prior to need
PreC)
;
570$        ASSIGN:      Dispose of program review prior to need PreC.NumberOut=
                 Dispose of program review prior to need PreC.NumberOut + 1;
12966$      DISPOSE:     No;
```

```
;
;
;    Model statements for module:  BasicProcess.Create 7 (Uncertainty generator for Event Happens
PreC)
;

12967$       CREATE,       1,DaysToBaseTime(0),Event Happens 2:DaysToBaseTime(TRIA( 30 , 60 , 90
)):NEXT(12968$);

12968$       ASSIGN:       Uncertainty generator for Event Happens PreC.NumberOut=
                    Uncertainty generator for Event Happens PreC.NumberOut + 1:NEXT(571$);



;
;
;    Model statements for module:  BasicProcess.Decide 206 (Event Happens PreC)
;
571$        BRANCH,       1:
                    If,Contract Start PreC==1,12971$,Yes:
                    Else,12972$,Yes;
12971$       ASSIGN:       Event Happens PreC.NumberOut True=Event Happens PreC.NumberOut True +
1:NEXT(531$);

12972$       ASSIGN:       Event Happens PreC.NumberOut False=Event Happens PreC.NumberOut False +
1:NEXT(572$);



;
;
;    Model statements for module:  BasicProcess.Decide 194 (Scope Growth Technical Problems PreC)
;
531$        BRANCH,       1:
                    With,(20)/100,12973$,Yes:
                    Else,12974$,Yes;
12973$       ASSIGN:       Scope Growth Technical Problems PreC.NumberOut True=
                    Scope Growth Technical Problems PreC.NumberOut True + 1:NEXT(532$);

12974$       ASSIGN:       Scope Growth Technical Problems PreC.NumberOut False=
                    Scope Growth Technical Problems PreC.NumberOut False + 1:NEXT(533$);


;
```

```
;
;     Model statements for module:  BasicProcess.Separate 23 (Separate for logic testing PreC)
;
532$         DUPLICATE,     100 - 0:
                        1,12977$,0:NEXT(12976$);

12976$       ASSIGN:       Separate for logic testing PreC.NumberOut Orig=Separate for logic testing
PreC.NumberOut Orig + 1
                        :NEXT(515$);

12977$       ASSIGN:       Separate for logic testing PreC.NumberOut Dup=Separate for logic testing
PreC.NumberOut Dup + 1
                        :NEXT(533$);



;
;
;     Model statements for module:  BasicProcess.Decide 196 (Preliminary Design Review)
;
533$         BRANCH,       1:
                        If,TNOW.GE.( ( SDD contract length * .25 )  + SDD Contract Start ),12978$,Yes:
                        Else,12979$,Yes;
12978$       ASSIGN:       Preliminary Design Review.NumberOut True=Preliminary Design
Review.NumberOut True + 1:NEXT(576$);

12979$       ASSIGN:       Preliminary Design Review.NumberOut False=Preliminary Design
Review.NumberOut False + 1:NEXT(534$);



;
;
;     Model statements for module:  BasicProcess.Decide 208 (Trigger PDR once)
;
576$         BRANCH,       1:
                        If,PDR==0,12980$,Yes:
                        Else,12981$,Yes;
12980$       ASSIGN:       Trigger PDR once.NumberOut True=Trigger PDR once.NumberOut True +
1:NEXT(577$);

12981$       ASSIGN:       Trigger PDR once.NumberOut False=Trigger PDR once.NumberOut False +
1:NEXT(578$);
```

```
;
;
;    Model statements for module:  BasicProcess.Assign 110 (Change PDR variable)
;
577$         ASSIGN:       PDR=1:NEXT(578$);


;
;
;    Model statements for module:  BasicProcess.Decide 209 (Critical Design Review)
;
578$         BRANCH,       1:
                     If,TNOW.GE. ( (SDD contract length*0.45) + SDD Contract Start ),12982$,Yes:
                     Else,12983$,Yes;
12982$       ASSIGN:       Critical Design Review.NumberOut True=Critical Design Review.NumberOut
True + 1:NEXT(579$);

12983$       ASSIGN:       Critical Design Review.NumberOut False=Critical Design Review.NumberOut
False + 1:NEXT(534$);


;
;
;    Model statements for module:  BasicProcess.Decide 210 (Trigger CDR once)
;
579$         BRANCH,       1:
                     If,CDR==0,12984$,Yes:
                     Else,12985$,Yes;
12984$       ASSIGN:       Trigger CDR once.NumberOut True=Trigger CDR once.NumberOut True +
1:NEXT(580$);

12985$       ASSIGN:       Trigger CDR once.NumberOut False=Trigger CDR once.NumberOut False +
1:NEXT(534$);


;
;
;    Model statements for module:  BasicProcess.Assign 111 (Change CDR variable)
;
580$         ASSIGN:       CDR=1:NEXT(534$);
```

```
;
;
;    Model statements for module:  BasicProcess.Decide 198 (Query contract elapsed time 6 months to
completion PreC)
;
534$        BRANCH,      1:
                    If,TNOW.GE.(SDD Contract End Date-180) || SDD Contract condition end is
close,12986$,Yes:
                    Else,12987$,Yes;
12986$      ASSIGN:      Query contract elapsed time 6 months to completion PreC.NumberOut True=
                    Query contract elapsed time 6 months to completion PreC.NumberOut True +
1:NEXT(535$);

12987$      ASSIGN:      Query contract elapsed time 6 months to completion PreC.NumberOut False=
                    Query contract elapsed time 6 months to completion PreC.NumberOut False +
1:NEXT(537$);


;
;
;    Model statements for module:  BasicProcess.Decide 199 (contractor loop check PreC)
;
535$        BRANCH,      1:
                    If,contractor loop PreC==0,12988$,Yes:
                    Else,12989$,Yes;
12988$      ASSIGN:      contractor loop check PreC.NumberOut True=contractor loop check
PreC.NumberOut True + 1:NEXT(573$);

12989$      ASSIGN:      contractor loop check PreC.NumberOut False=contractor loop check
PreC.NumberOut False + 1
                    :NEXT(537$);


;
;
;    Model statements for module:  BasicProcess.Assign 108 (Declare Acq Planning and Costing to Begin
PreC)
;
573$        ASSIGN:      Acq Plan PreC=1:
                    Costing Begin PreC=1:NEXT(536$);
```

```
;
;
;     Model statements for module:  BasicProcess.Assign 98 (Set Contractor loop variable preC)
;
536$          ASSIGN:        contractor loop PreC=1:NEXT(537$);



;
;
;     Model statements for module:  BasicProcess.Decide 200 (Contract complete PreC)
;
537$          BRANCH,        1:
                        If,TNOW.GE.SDD Contract End Date || End SDD contract,12990$,Yes:
                        Else,12991$,Yes;
12990$        ASSIGN:        Contract complete PreC.NumberOut True=Contract complete PreC.NumberOut
True + 1:NEXT(646$);

12991$        ASSIGN:        Contract complete PreC.NumberOut False=Contract complete PreC.NumberOut
False + 1:NEXT(562$);



;
;
;     Model statements for module:  BasicProcess.Decide 226 (Determine final SDD cost)
;
646$          BRANCH,        1:
                        If,End SDD contract==0,12992$,Yes:
                        Else,12993$,Yes;
12992$        ASSIGN:        Determine final SDD cost.NumberOut True=Determine final SDD
cost.NumberOut True + 1:NEXT(647$);

12993$        ASSIGN:        Determine final SDD cost.NumberOut False=Determine final SDD
cost.NumberOut False + 1:NEXT(561$);



;
;
;     Model statements for module:  BasicProcess.Assign 141 (Assign final SDD cost)
;
647$          ASSIGN:        SDD Final contract cost=SDD contract cost:
                        End SDD contract=1:NEXT(561$);
```

```
;
;
;    Model statements for module:  BasicProcess.Dispose 43 (Completion of contract PreC)
;
561$         ASSIGN:       Completion of contract PreC.NumberOut=Completion of contract
PreC.NumberOut + 1;
12994$       DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Dispose 44 (End of Event Happens Loop PreC)
;
562$         ASSIGN:       End of Event Happens Loop PreC.NumberOut=End of Event Happens Loop
PreC.NumberOut + 1;
12995$       DISPOSE:      No;


;
;
;    Model statements for module:  BasicProcess.Dispose 46 (Dispose of event happens prior to need
PreC)
;
572$         ASSIGN:       Dispose of event happens prior to need PreC.NumberOut=
                        Dispose of event happens prior to need PreC.NumberOut + 1;
12996$       DISPOSE:      No;
```

SIMAN Global Code

```
PROJECT,      "Enterprise Acquisition Process"," Robb Wirthlin",,,No,No,No,No,No,No,No,No,No,No;

ATTRIBUTES:   SimTime;

VARIABLES:    Acq Plan PreC,CLEAR(System),CATEGORY("User Specified-User
Specified"),DATATYPE(Real):
           Program Office Cost Estimate PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
           Set Acquisition Program Baseline PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
           Change Contract or Rescope contract PreC.WIP,CLEAR(System),CATEGORY("Exclude-
Exclude"),DATATYPE(Real):
```

Joint Integration PreA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Finalize RSR and calendar items.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Panels PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check TRR looping condition.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Waiting Period.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft document joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
End at MS C.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check Condition PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Preferred System Concept,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0.0:
Contract complete PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Critical comments indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JROC issues PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Air Staff processes joint int preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
SRR rework and delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II Or III Dev testing PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC joint interest preB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Post AFROC actions.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Continute other Acquisition Swimlane activities preA.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
JROC PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Kill time at AFROC joint interest PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Comment Resolution joint int preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Check TRR looping condition.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Death at AFROC joint int preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Developmental system testing and Live Fire test and Operational Assessment testing.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),

DATATYPE(Real):

Final AFROC approval joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC decision indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Contractor cost estimate PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

TRR Delay,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Logic check for ACAT level PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Start AoA flag,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Approve Selected CoA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Separate activities once preC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT 1 Preparation for Acquisition Panels preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Resolving Flag level comments PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Prepare Courses of Action PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

AoA flag,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

AFROC Preparations indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Determine type of requirements document needed.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

CDR 2.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II or III Preparation for Acquisition Panels preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Analysis.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Draft document joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Joint Capabilities Board.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Route to Advanced Concepts.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check on conditions.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

CDR delay 2 PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Split into costing activities PreB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Air Staff processes joint int preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Dead activity joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

TD original contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

MAJCOM A Letters Coordinate and Concur.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Critical Comments? joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Scope and Award Technology Development Contracts.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
MDA Milestone approval.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Combined Testing.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check Condition.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Separate again preA.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Independent document preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Additional Adjustments.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
CDR Rework PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
CDR delay 2 PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level check preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Kill at MS B decision.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Wait for more favorable conditions PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Acquisition Panels PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Update Briefing Materials PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PreRSR MAJCOM A8.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Program Kill at CDR.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
CDR delay 2 PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
CDR Rework PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Hold for a year.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I time delay PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Preparation for Acquisition Panels preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Timing of funds OK?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft briefing and materials.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Split into costing activities PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Trigger PDR once.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Preliminary Design Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level check preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT 1 Preparation for Acquisition Panels preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Engineering Development model,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

ACAT I time delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

KPP Development.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Wait for more favorable conditions PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Set Acquisition Program Baseline PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Accomplish Post AFROC actions joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

PreRSR MAJCOM A8.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Delay to repeat required steps PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Planning Activities PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Document review phase 2 flag level joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

document signing and validation joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Needs AOA ICD OK,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

AFROC Preparations joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval later on joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Direct entry into SDD phase,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Pre MS B contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

ACAT 1 funding.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Bring the processes together PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT I time delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

SDD Final contract cost,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Check for previous path.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Completion of contract PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Contract started PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Document Reveiw Phase 2 Flag Level PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Scope Growth Technical Problems PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Interoperability Certification joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

RFP Coordination Process.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

End SDD contract,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

ACAT II Or III Acquisition Planning PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Program Office Cost Estimate PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Obtain funds in a timely manner PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Split flow PreB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Determine final SDD cost.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

AoA killed,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

Document review phase 2 flag level joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Developmental Test and Evaluation.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for ACAT level for potential AoA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Split into Acq Planning and Costing Activities.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Program Review OK.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Affordability Assessment PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

RFP Release and Source Selection PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

MS B approval attempt,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

Requires AoA but not ICD,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Check for previous path indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Panels.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Comment Resolution joint int preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II Or III Dev testing PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous path joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PDR delay 2 PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

MDA Milestone approval PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Comment Resolution joint int preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Fabrication.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

SVR rework and delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

AFROC decision indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Program Office Cost Estimate PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Random Entry Point.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Schedule quality PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Begin Testing ACAT II or III PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Random Entry Point.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Source selection plans preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Separate for logic testing PreB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

SDD Final contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

RSR HQ USAF A5R.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Source selection plans preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

PDR Rework PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Check looping condition.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

JCB issues.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Seek funds PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Update Briefing Materials.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Prepare Courses of Action PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Death at AFROC indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

draft document preC joint interest.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

JROC preparations PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

DRR rework and delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

AFROC Count,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

Short study.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Contract Startup PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Check for ACAT level for potential AoA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PEM or other staff find money PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Waiting Period.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

End at AoA check.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Document Review Phase.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Draft RFP Preparation preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

to Acquisition Modernization or Sustainment Activity.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for previous MDA decision attempt preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous path indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Functional Capabilities Board PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase 2 flag level joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PEM or other staff find money PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Wait until next year.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PreBpursuerequirements,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Form High Performance Team.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
JROC PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Receipt of approved CPD.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Kill at MS A decision time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Change Contract or Rescope contract PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
T and E Start PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Accomplish Post AFROC actions joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
EOA PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to pursue requirements PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JCB issues PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Functional Capabilities Board PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC resolution joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Non AoA Route.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Set Acquisition Program Baseline PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Delay for Protest review PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Release and Source Selection PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Determine path for process flow Scope Growth PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Non AoA Route.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Panels PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

JCB issues.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II or ACAT III time delay PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Document Reveiw Phase 2 Flag Level.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Independent document preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Begin Testing ACAT II or III PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Resolving Flag level comments.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process 2nd time joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Split into Acq Planning and Costing Activities PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

First time to contract completion?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Separate for logic testing PreB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Approve Selected CoA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PDR delay 2 PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Funds Redirected.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Integration PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Draft briefing and materials PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Dead activity joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Document Review Phase PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Second split into costing activities PreB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Contract Startup PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Query contract elapsed time 6 months to completion PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Integration PreA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Form High Performance Team PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC decision indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Finalize RSR and calendar items PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Integration PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Delay for Protest review PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Event Happens PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

High Performance Team work preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JCB issues PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
End of Event Happens Loop PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Funds Redirected.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Set ACAT level.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Complete predecessor activities preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay for Protest review PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Integration PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Contract complete PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Decision joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Dev testing PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
RSR HQ USAF A5R.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Change Contract or Rescope contract PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Split flow for PreMSB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM Approval? joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous MDA decision attempt preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
PEM or other staff find money PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AFROC decision joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
RSR HQ USAF A5R PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Update Briefing Materials PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Funding problem Contract Change Required preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Set ACAT level.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Fabrication.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
draft document preA joint interest.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III funding.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Trigger Acquisition swimlane activity.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II Or III Acquisition Planning PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Analysis.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
SVR rework and delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I time delay PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AFROC Preparations joint int preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM Approval? joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Death at AFROC joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Finalize RSR and calendar items PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
JROC preparations.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Uncertainty generator for Event Happens PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level check preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
draft document preB joint interest.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Capabilities Board PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Scope and Award Technology Development Contracts.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
for Affordability Assessment PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Killed at AoA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Preliminary Design Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Set ACAT level.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Back into process at A time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Decision to Repursue.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
draft document preB joint interest.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PDR,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Resolve JCB issues.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
KPP Development.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Prepare Courses of Action PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
MAJCOM A Letters Coordinate and Concur PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Air Staff processes joint int preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Planning Activities PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Contractor cost estimate PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

EOA rework and delay preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Contract started PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Rejection outright.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Independent Cost Estimate PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Independent Cost Estimate PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

DRR rework and delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Early Operational Assessment.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Resolving Flag level comments.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Processes come together.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Form High Performance Team PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Timing of funds OK?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

PDR delay 3 PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Choose and recommend a selected CoA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

comment resolution indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Draft RFP Preparation preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

contractor loop PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Draft document joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Capabilities Board PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

CDR 2.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Document Reveiw Phase 2 Flag Level PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

draft document preC joint interest.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check Condition PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Contract complete PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JCB issues.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Wait until both complete preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Delay to repeat required steps PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for ACAT level preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Costing Begin PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Critical comments indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Costing Begin PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Logic check for ACAT level PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Rejection outright.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT level preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II or III Prepare for Acquisition Panels preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Wait until next year.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT I prepare for Acquisition panels.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Delay to Align Funds PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

to Acquisition Modernization or Sustainment Activity.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Direct entry to PreC Phase,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Develop Courses of Action.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Check Condition PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II Or III Acquisition Planning PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Program Review OK PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Draft RFP Preparation preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Protest award PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Determine path for process flow Scope Growth PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Assembly.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Program Kill time at PDR,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Separate activities once preA.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Final AFROC approval joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Draft RFP Preparation preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Acq planning activities depend upon ACAT level preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT I Acquisition Planning PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Dispose of program review prior to need PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

RSR HQ USAF A5R PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Scope Growth Technical Problems PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Interest preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Accomplish Post AFROC actions indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Separate again preA.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Update and Schedule Calendar PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JROC issues PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Affordability Assessment PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Fabrication.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Check for previous path indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Contractor cost estimate PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Critical comments joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
CDR 3.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Integrated Testing.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Split into costing activities PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Decision joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Critical Comments? joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Acquisition Planning PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Split flow PreB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft document indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill at MS A decision.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Program review condition PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level check preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Design Readiness Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Preparation for Acquisition Panels.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Developmental system testing and Live Fire test and Operational Assessment testing.NumberOut,CLEAR(Statistics),
CATEGORY("Exclude"):
Kill time at MS C decision,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Event Happens PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Develop AoA Plan ACAT I.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Death at AFROC joint int preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft RFP Preparation preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Resolve JCB issues.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
End at COA PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Analysis of Alternatives.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Determine path.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Draft briefing and materials PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Panels preparation PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Comment Resolution joint int preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Independent document preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Joint Capabilities Board.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition panels preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay to repeat required steps PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Analysis.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Finalize RSR and calendar items.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
SDD original contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
MAJCOM approval joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
JROC preparations PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Functional Capabilities Board PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Trades Delay PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Develop TandE strategy and Technology Development Strategy.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
KPP Development signal PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
contractor loop check PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT 1 Preparation for Acquisition Panels preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Split flow PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
SDD contract cost,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Continue until completion and End of process.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process 2nd time joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Joint Capabilities Board PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

draft document preA joint interest.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Accomplish Post AFROC actions joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Trades Delay,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Seek funds PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Critical Comments? joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

draft document preC joint interest.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Dev testing rework and delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

SRR rework and delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Wait for more favorable conditions PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

RFP Release and Source Selection PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Update and Schedule Calendar PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Obtain funds in a timely manner PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JROC issues PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

ACAT I prepare for Acquisition panels.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Critical Design Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

trade counter,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

PreRSR MAJCOM A8 PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II or ACAT III time delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Decision joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Delay to Align Funds PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Assembly.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for previous path.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Funds Available preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Developmental system testing and Live Fire test and Operational Assessment testing.NumberIn,CLEAR(Statistics),

CATEGORY("Exclude"):

Prepare Concept of Operation.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Planning Activities PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous MDA decision attempt preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Selected CoA Kill point,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Final AFROC resolution joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Program Office Cost Estimate PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase 2 flag level joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Joint Interest preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Develop AoA Plan.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Program Review OK.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MS A approval attempt,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Update and Schedule Calendar PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
DRR Success,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Analysis of Alternatives.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Independent Cost Estimate PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Concept Decision and ADM.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC resolution joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Determine final SDD cost.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
End of Program Management and Oversight loop PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
First time to contract completion?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JROC issues.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Draft briefing and materials PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
PDR Rework time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Separate for logic testing PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Independent document preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
CDR Rework PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
ACAT II or III Preparation for Acquisition Panels.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Study for ICD Development.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Route to Proper Organization.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Change Contract or Rescope contract PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Seek funds PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Waiting Period.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Trigger CDR once.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Receipt of approved CCD.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Query contract elapsed time 6 months to completion PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Prepare Concept of Operation.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Decision to pursue requirements.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving Flag level comments PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Critical comments joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
PDR success??.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Test Readiness Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC approval joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to pursue requirements PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous MDA decision attempt preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Acquisition Planning PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Death at AFROC indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Prepare for Acquisition Panels preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Comment Resolution joint int preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Update and Schedule Calendar.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
TD final contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Hold for a year.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM A Letters Coordinate and Concur.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
JROC PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Resolving Flag level comments PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
MDA Milestone approval.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for previous path joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving Flag level comments PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Contract started PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Document review phase joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Archive for rejected ideas in formal review.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Separate for logic testing PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Determine path for process flow Scope Growth PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Obtain funds in a timely manner PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Air Staff processes joint int preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
JROC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Document Reveiw Phase 2 Flag Level PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process 2nd time joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Second split into costing activities PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Conduct AoA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Functional Capabilities Board PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Critical comments indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Draft briefing and materials.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
funding quality,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
document signing and validation joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
System Requirements Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay for Protest review PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Release and Source Selection PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Contract Startup PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Hold for a year later in process joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
End prior to start of Requirements swimlane PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Document Review Phase PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Query contract elapsed time 6 months to completion PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Choose and recommend a selected CoA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Protest award PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT 1 Preparation for Acquisition Panels preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Check for previous path joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Dev testing rework and delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
CDR success??.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Early Operational Assessment.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Wait for more favorable conditions.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AFROC Preparations indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
MS A decision time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Post AFROC actions joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Develop TandE strategy and Technology Development Strategy.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Scope Growth Technical Problems PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Planning Activities PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
contractor loop,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Resolving flag level comments joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Dev testing rework and delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Test Readiness Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Completion of contract PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM Approval? joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Wait until next year.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
End Process at COA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process 2nd time joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
In Scope of Existing document?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Source selection plans preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
RSR HQ USAF A5R PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Funds Redirected PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
End of Event Happens Loop PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Early Archive,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
ACAT II Or III Acquisition Planning PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MDA Milestone approval PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Panels PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Source selection plans preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Funding problem Contract Change Required preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
OR junction.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Program Office Cost Estimate PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III time delay PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Funding problem Contract Change Required preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM A Letters Coordinate and Concur PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Affordability Assessment PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase 2 flag level joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft document joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
PDR delay 2 PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Study for ICD Development.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
PDR 2.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Develop Courses of Action.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM Approval? joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Complete predecessor activities preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
DRR loop,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Air Staff processes joint int preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Separate activities once preA.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Check DRR looping condition.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
End of contract change path.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JROC issues PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
MAJCOM approval later on joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Air Staff processes joint int preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Functional Capabilities Board.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Update Briefing Materials PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Dev testing activities depend upon ACAT level preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Program Office Cost Estimate PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Back into process at C time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Source selection plans preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
EOA rework and delay preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Contractor cost estimate PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM A Letters Coordinate and Concur PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity indep preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
PDR 2.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Source selection plans preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
MAJCOM approval later on joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Update Briefing Materials.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT 1 Preparation for Acquisition Panels preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
OR junction.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
CPD Time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
AFROC Preparations joint int preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Initial Rate Production Baseline.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Develop AoA Plan ACAT I.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process indep preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Death at AFROC joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
PreCpursuerequirements,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Prepare Courses of Action PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Request for Funds between August and December.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
System Requirements Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Short study.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Route to Advanced Concepts.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Finalize RSR and calendar items.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Develop AoA Plan.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
to Acquisition Modernization or Sustainment Activity.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
JCB issues PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
CDR 3.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
draft document preB joint interest.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft briefing and materials.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Continute other Acquisition Swimlane activities preA.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Begin Testing PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to pursue requirements.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Split into Acq Planning and Costing Activities PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
PDR rework,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
CDR Rework time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
ACAT I prepare for Acquisition panels.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Panels preparation PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AcqPanelTry,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
ACAT level preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Air Staff processes joint int preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I time delay PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Concept Decision and ADM.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to Repursue PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JCB issues PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Develop AoA Plan ACAT I.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Hold for a year later in process.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Final AFROC resolution joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Kill by MDA at Concept Decision PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Accomplish Post AFROC actions indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Separate activities once preB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Check Condition PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Design Readiness Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Affordability Assessment PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

ACAT II or ACAT III time delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

DRR Rework,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Final AFROC approval joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Delay to repeat required steps PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Panels PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

KPP Development.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Determine path for process flow Scope Growth PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Scope and Award System Design and Development Contracts.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Draft document joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Fully funded to 80% ICE in FYDP? PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Protest upheld PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Independent document preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

contractor loop PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT level check for Acquisition swimlane preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

RSR HQ USAF A5R PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I time delay PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PreRSR MAJCOM A8 PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Dispose of event happens prior to need PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Schedule quality,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Processes come together PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Scope and Award Technology Development Contracts.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Acquisition Planning PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Critical comments joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Integration PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
comment resolution joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
SVR rework,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
AFROC Decision joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Finish in Sustainment,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Split flow PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
TRR Delay PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC joint integ PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Resolve JROC issues PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Integration PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay for Protest review PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC joint integ PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
MDAP Threshold crossed?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Prepare for Acquisition Panels preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Kill time at AFROC joint integ PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Event Happens PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Dev testing activities depend upon ACAT level preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Resolve JROC issues.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Start model.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Scope of Existing CCD,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Change Contract or Rescope contract PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Comment Resolution joint int preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
System Verification Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Obtain funds in a timely manner PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Pre DRR Acquisition Panels.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Dev testing PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Assembly.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Prepare Concept of Operation.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
RFP Coordination Process PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AFROC Preparations joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Count PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
AFROC Count PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
JROC preparations PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Wait for a year.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
PDR success??.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Preparation for Acqiusition Panels before DRR.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Protest award PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III time delay PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
TRR loop,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Document Reveiw Phase 2 Flag Level.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Uncertainty generator for Event Happens PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Finalize RSR and calendar items PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Split flow for PreMS C.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Air Staff processes joint int preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

TD Contract End Date,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

For existing Program?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

for Affordability Assessment PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

TRR Delay PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

CPD,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Route to Advanced Concepts.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Document Review Phase.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase 2 flag level joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Protest upheld PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Seek funds PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Critical Comments? joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PDR Rework PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Functional Capabilities Board.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Back into process at PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

contract cost,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

MDAP Threshold crossed?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Trades Needed.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Back into process at PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Change Contract or Rescope contract PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Draft document indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

PreRSR MAJCOM A8 PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Finalize RSR and calendar items PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Functional Capabilities Board PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase 2 flag level joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Independent document preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Update Briefing Materials PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Back into process at PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Longer Study.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Prepare Courses of Action PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Accomplish Post AFROC actions joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Draft document indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Wait for more favorable conditions.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

TRR Delay PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Contractor cost estimate PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Second split into costing activities PreB.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Acq planning activities depend upon ACAT level preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Set Acquisition Program Baseline PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

MAJCOM approval.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous path joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC decision indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

StarttimeofAoA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

Draft RFP Preparation preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Set Acquisition Program Baseline PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

PDR Rework PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

End of Program Review Loop.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Document Review Phase PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Early Operational Assessment.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase 2 flag level joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Check looping condition.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Update Briefing Materials.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

System Performance Specification,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Acquisition Panels.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Developmental Test and Evaluation.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II or ACAT III time delay PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM Approval? joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Make Trades?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Final AFROC resolution joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Kill at begin of requirements swimlane PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

End of Program Management and Oversight loop.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

End after waiting period.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Draft briefing and materials PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Integrated Testing.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Kill at Begin of requirements swimlane PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Contract Startup PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT level preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PDR delay 3 PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Final TD contract cost,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Query contract elapsed time 6 months to completion PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval later on joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Check on conditions PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

TD Contract Start,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

SDD Contract Start,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Funds Redirected PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Decision to pursue requirements PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous MDA decision attempt preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Document review phase 2 flag level joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

funding quality PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

ACAT I time delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Finalize RSR and calendar items PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Joint Integration PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

High Performance Team work preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

RFP Release and Source Selection PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Critical Design Review.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Final AFROC approval joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

TD Contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

contractor loop PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

High Performance Team work preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JCB issues PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

JROC preparations PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Delay for Protest review PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Set Acquisition Program Baseline PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

EOA rework and delay preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
PEM or other staff find money PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Document Reveiw Phase 2 Flag Level.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Contract started PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Comment Resolution joint int preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Update and Schedule Calendar PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint int preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to Repursue PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Preparation for Acquisition Panels preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Kill by MDA at Concept Decision.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Contractor cost estimate PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Source selection plans preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Update Briefing Materials PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check Condition.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving Flag level comments.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
contractor loop check PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III time delay.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Prepare Courses of Action PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
KPPs Ready PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Post AFROC actions indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Determine type of requirements document needed.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Death at AFROC indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
KPPs Ready PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
testinglength,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
CompletetimeofAoA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Death at AFROC joint int preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
CDR success??.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MS B decision time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Determine path.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Capabilities Board PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Integrated Testing.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft RFP Preparation preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
ICD Time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

MAJCOM approval PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
JROC PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Check for previous path joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III funding.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
for funding check PreC.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Comment Resolution joint int preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PEM or other staff find money PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
AFROC Preparations indep preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Wait for a year.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Pre DRR Acquisition Panels.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Developmental Test and Evaluation.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
for funding check PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Independent Cost Estimate PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
In Scope of Existing document?.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check on conditions.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
PreRSR MAJCOM A8 PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Check for ACAT level preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II Or III Dev testing PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC resolution joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Accomplish Post AFROC actions joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process 2nd time joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
comment resolution indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Panels PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Scope and Award System Design and Development Contracts.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
SDD contract length,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
JCB issues PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Combined Testing.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
TD Contract End Date Near,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Reject in formal review preA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
SDD Contract End Date,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
MDA Milestone approval PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Waiting Period End,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Critical Comments? joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Separate activities once preB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
SDD Contract condition end is close,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
EOA PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Funding problem Contract Change Required preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
JROC preparations.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Initial Rate Production Baseline.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
SRR rework and delay.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Develop AoA Plan.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
ACAT 1 funding.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Longer Study.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Kill at MS C decision.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Analysis of Alternatives.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
CCD,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Post AFROC actions joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM A Letters Coordinate and Concur PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Wait for RFP Coord Process to end.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
PDR 3.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Draft briefing and materials PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Update and Schedule Calendar.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint integ preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Program Kill at PDR.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Joint Interest preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
PreB CCD OK,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Trigger PDR once.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Study for ICD Development.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
End TD contract,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Document Reveiw Phase 2 Flag Level PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Form High Performance Team PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II Or III Acquisition Planning PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft RFP Preparation preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
High Performance Team work preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
ACAT Level,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),1:
Complete predecessor activities preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Split into costing activities PreB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Check DRR looping condition.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
System Verification Review.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
MAJCOM approval later on joint integ preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Final PDR.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Contract Start PreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
PDR 3.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Route to Proper Organization.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Request for Funds between August and December.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Check on conditions PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Trigger CDR once.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Scope Growth Technical Problems PreB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT II Or III Acquisition Planning PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Dispose of event happens prior to need.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Critical Comments? joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Affordability Assessment PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Resolving Flag level comments PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

ACAT I time delay PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Prepare for Acquisition.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

MS C approval attempt,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

ACAT I Acquisition Planning PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

draft document preA joint interest.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

JROC preparations.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Wait for more favorable conditions.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Split flow for PreMS C.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

JCB issues PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Route to Proper Organization.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Functional Capabilities Board.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution indep preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Random Entry Point.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Protest upheld.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT I Acquisition Planning PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Prepare for Acquisition.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Kill time at MS B decision,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

PreC Baseline,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Joint Capabilities Board.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations joint int preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

MAJCOM approval indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Wait for a year.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Split flow for PreMSB.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Check for previous path indep preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

MDA Milestone approval PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Source selection plans preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Air staff process joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

ACAT level preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Update and Schedule Calendar.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Dispose of program review prior to need.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JROC issues.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Draft briefing and materials PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Document Review Phase PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Contract Startup PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Funds Available preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

comment resolution joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Program Review OK PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Decision to Repursue PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

PEM or other staff find money PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Separate activities once preC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions indep preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

for funding check.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):

Short study.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Conduct AoA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

MAJCOM approval indep preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Acquisition Planning Activities PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Dead activity indep preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions joint int preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Fully funded to 80% ICE in FYDP? PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Longer Study.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for previous path indep preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

End prior to start of Requirements swimlane PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

RFP Release and Source Selection PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Contract Startup PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Resolve JCB issues PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Make Trades?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Document Reveiw Phase 2 Flag Level PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Final AFROC approval joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Decision joint int preC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

ACAT 1 Preparation for Acquisition Panels preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Check for previous path joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Decision to pursue requirements PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

For existing Program?.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I time delay PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or III Preparation for Acquisition Panels.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC indep PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
CDR,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
EOA success,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
ICD,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Air staff process indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT I Dev testing PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay to repeat required steps PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Scope and Award System Design and Development Contracts.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC indep PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Program review condition.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Processes come together PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Planning Activities PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill time at AFROC indep preC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
End of contract change path PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC resolution joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Additional Adjustments.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC decision joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Trigger Acquisition swimlane activity.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Back into process at B time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
MS C decision time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
Begin Testing PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Post AFROC actions joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
RFP Coordination Process PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT level check for Acquisition swimlane preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Final AFROC resolution joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process 2nd time joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Update and Schedule Calendar PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

PDR delay 3 PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Integration PreA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Document review phase joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Independent document preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Air staff process joint integ preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Independent document preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
RequirementPathTrackPreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
ACAT II or ACAT III time delay PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Kill at AFROC joint interest PreA,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
RequirementPathTrackPreC,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
MAJCOM approval joint integ preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Protest award PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
End of Program Review Loop PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Trades Needed.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Pre DRR Acquisition Panels.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Dead activity joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Acq planning activities depend upon ACAT level preB.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Event Happens PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Bring three processes together PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Interoperability Certification joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft document indep preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Draft document indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Update Briefing Materials PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
ACAT II or ACAT III time delay PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Preparation for Acqiusition Panels before DRR.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Resolving Flag level comments PreB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Protest upheld.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Contract complete PreB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Decision joint int preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Program Kill Time at CDR,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):

Early Archive End.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous MDA decision attempt preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
for funding check.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Delay to Align Funds PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Second split into costing activities PreC.NumberOut Orig,CLEAR(Statistics),CATEGORY("Exclude"):
Resolving flag level comments joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Comment Resolution joint int preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
MAJCOM Approval? joint int preA.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Split into Acq Planning and Costing Activities.NumberOut Dup,CLEAR(Statistics),CATEGORY("Exclude"):
JCB issues PreC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
comment resolution indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Acquisition Panels.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Death at AFROC joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Finalize RSR and calendar items PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Develop TandE strategy and Technology Development Strategy.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
AFROC Preparations joint int preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acq planning activities depend upon ACAT level preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
JROC preparations PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Interoperability Certification joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint integ preB.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Initial Rate Production Baseline.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Delay to repeat required steps PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Functional Capabilities Board PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
JROC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process 2nd time joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
document signing and validation joint integ preB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Choose and recommend a selected CoA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process indep preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Decision to Repursue.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):

Preparation for Acqiusition Panels before DRR.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Document Reveiw Phase 2 Flag Level PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process 2nd time joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process 2nd time joint integ preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Joint Capabilities Board PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Hold for a year later in process joint integ preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Trades Delay PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Develop Courses of Action.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Hold for a year later in process joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

document signing and validation joint integ preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Critical comments joint integ preA.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Air Staff processes joint int preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Trades Delay PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Update and Schedule Calendar PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Independent Cost Estimate PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JROC issues PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

contract start,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:

AFROC Preparations indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

EOA PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Final PDR.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year later in process indep preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Determine type of requirements document needed.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

MAJCOM approval later on joint integ preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):

Resolve JCB issues PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):

Air staff process joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Final AFROC resolution joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

AFROC Preparations indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Prepare for Acquisition.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):

Hold for a year PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Post AFROC actions PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):

Accomplish Post AFROC actions indep preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Air staff process joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft RFP Preparation preC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
SVR rework and delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Interest preC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Affordability Assessment PreB.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
RequirementPathTrack,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Resolving flag level comments joint integ preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Draft document joint integ preB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Joint Capabilities Board PreC.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition panels preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
DRR rework and delay.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
CCD Time,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real),0:
Accomplish Post AFROC actions indep preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Hold for a year later in process PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Combined Testing.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
Independent Cost Estimate PreC.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Resolving flag level comments joint integ preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Independent document preA.WIP,CLEAR(System),CATEGORY("Exclude-Exclude"),DATATYPE(Real):
Decision to Repursue PreC.NumberOut True,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition Panels preparation PreC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Accomplish Post AFROC actions indep preC.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Acquisition panels preA.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Source selection plans preB.NumberIn,CLEAR(Statistics),CATEGORY("Exclude"):
Check for previous path joint int preC.NumberOut False,CLEAR(Statistics),CATEGORY("Exclude"):
Acq Plan PreB,CLEAR(System),CATEGORY("User Specified-User Specified"),DATATYPE(Real):
comment resolution joint integ preA.NumberOut,CLEAR(Statistics),CATEGORY("Exclude"):
JROC preparations PreB.NumberOut,CLEAR(Statistics),CATEGORY("Exclude");

QUEUES: KPPs arrive from Requirements.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for PDR.Queue,FIFO,,AUTOSTATS(Yes,,):
Bring the processes together PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for successful Design Readiness Review Indep PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for successful Design Readiness Review Joint PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Processes come together PreB.Queue,FIFO,,AUTOSTATS(Yes,,):

Processes come together.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for AoA Start.Queue,FIFO,,AUTOSTATS(Yes,,):
Complete predecessor activities preA.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for T and E Start.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for RFP Coord Process to end.Queue,FIFO,,AUTOSTATS(Yes,,):
KPPs arrive from Requirements PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Complete predecessor activities preB.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for EOA completion.Queue,FIFO,,AUTOSTATS(Yes,,):
Processes come together PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for contract complete.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for successful Design Readiness Review Interest PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Complete predecessor activities preC.Queue,FIFO,,AUTOSTATS(Yes,,):
Bring three processes together PreB.Queue,FIFO,,AUTOSTATS(Yes,,):
for Affordability Assessment PreB.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait until both complete preA.Queue,FIFO,,AUTOSTATS(Yes,,):
Receipt of approved CPD.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for Baseline set PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
for Affordability Assessment PreC.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for signal for Costing and Acquisition Planning activities PreB.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for T and E signal.Queue,FIFO,,AUTOSTATS(Yes,,):
Receipt of approved CCD.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for CDR.Queue,FIFO,,AUTOSTATS(Yes,,):
Wait for signal for Costing and Acquisition Planning activities PreC.Queue,FIFO,,AUTOSTATS(Yes,,);

PICTURES: Picture.Airplane:
Picture.Green Ball:
Picture.Blue Page:
Picture.Telephone:
Picture.Blue Ball:
Picture.Yellow Page:
Picture.EMail:
Picture.Yellow Ball:
Picture.Bike:
Picture.Report:
Picture.Van:
Picture.Widgets:
Picture.Envelope:
Picture.Fax:
Picture.Truck:
Picture.Person:

Picture.Letter:
Picture.Box:
Picture.Woman:
Picture.Package:
Picture.Man:
Picture.Diskette:
Picture.Boat:
Picture.Red Page:
Picture.Ball:
Picture.Green Page:
Picture.Red Ball;

TALLIES: Record 36,,DATABASE(,"Interval","User Specified","Record 36"):
Record 37,,DATABASE(,"Interval","User Specified","Record 37"):
Record 38,,DATABASE(,"Interval","User Specified","Record 38"):
Record 39,,DATABASE(,"Interval","User Specified","Record 39"):
Record 40,,DATABASE(,"Interval","User Specified","Record 40"):
Record 41,,DATABASE(,"Interval","User Specified","Record 41"):
Record 1,,DATABASE(,"Interval","User Specified","Record 1"):
Record 2,,DATABASE(,"Interval","User Specified","Record 2"):
Record 3,,DATABASE(,"Interval","User Specified","Record 3"):
Record 4,,DATABASE(,"Interval","User Specified","Record 4"):
Record 5,,DATABASE(,"Interval","User Specified","Record 5"):
Record 6,,DATABASE(,"Interval","User Specified","Record 6"):
Record 7,,DATABASE(,"Interval","User Specified","Record 7"):
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Record 10,,DATABASE(,"Interval","User Specified","Record 10"):
Record 11,,DATABASE(,"Interval","User Specified","Record 11"):
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Record 13,,DATABASE(,"Interval","User Specified","Record 13"):
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Record 33,,DATABASE(,"Interval","User Specified","Record 33"):
Record 34,,DATABASE(,"Interval","User Specified","Record 34"):
Record 35,,DATABASE(,"Interval","User Specified","Record 35");

DSTATS: Acq Plan PreC,Acq Plan PreC Value,,DATABASE(,"Variable","User Specified","Acq Plan PreC"):
Preferred System Concept,Preferred System Concept Value,,DATABASE(,"Variable","User Specified",
"Preferred System Concept"):
Kill time at AFROC joint interest preB,Kill time at AFROC joint interest preB Value,,DATABASE(,"Variable",
"User Specified","Kill time at AFROC joint interest preB"):
Kill time at AFROC joint interest PreC,Kill time at AFROC joint interest PreC Value,,DATABASE(,"Variable",
"User Specified","Kill time at AFROC joint interest PreC"):
TRR Delay,TRR Delay Value,,DATABASE(,"Variable","User Specified","TRR Delay"):
Start AoA flag,Start AoA flag Value,,DATABASE(,"Variable","User Specified","Start AoA flag"):
AoA flag,AoA flag Value,,DATABASE(,"Variable","User Specified","AoA flag"):
TD original contract length,TD original contract length Value,,DATABASE(,"Variable","User Specified",
"TD original contract length"):
Engineering Development model,Engineering Development model Value,,DATABASE(,"Variable","User Specified",
"Engineering Development model"):
Direct entry into SDD phase,Direct entry into SDD phase Value,,DATABASE(,"Variable","User Specified",
"Direct entry into SDD phase"):
Pre MS B contract length,Pre MS B contract length Value,,DATABASE(,"Variable","User Specified",
"Pre MS B contract length"):
SDD Final contract cost,SDD Final contract cost Value,,DATABASE(,"Variable","User Specified",
"SDD Final contract cost"):
End SDD contract,End SDD contract Value,,DATABASE(,"Variable","User Specified","End SDD contract"):
AoA killed,AoA killed Value,,DATABASE(,"Variable","User Specified","AoA killed"):
MS B approval attempt,MS B approval attempt Value,,DATABASE(,"Variable","User Specified","MS B approval attempt"):
Requires AoA but not ICD,Requires AoA but not ICD Value,,DATABASE(,"Variable","User Specified",
"Requires AoA but not ICD"):

Schedule quality PreC,Schedule quality PreC Value,,DATABASE(,"Variable","User Specified","Schedule quality PreC"):

SDD Final contract length,SDD Final contract length Value,,DATABASE(,"Variable","User Specified",

"SDD Final contract length"):

AFROC Count,AFROC Count Value,,DATABASE(,"Variable","User Specified","AFROC Count"):

PreBpursuerequirements,PreBpursuerequirements Value,,DATABASE(,"Variable","User Specified",

"PreBpursuerequirements"):

Kill at MS A decision time,Kill at MS A decision time Value,,DATABASE(,"Variable","User Specified",

"Kill at MS A decision time"):

T and E Start PreB,T and E Start PreB Value,,DATABASE(,"Variable","User Specified","T and E Start PreB"):

Killed at AoA,Killed at AoA Value,,DATABASE(,"Variable","User Specified","Killed at AoA"):

Back into process at A time,Back into process at A time Value,,DATABASE(,"Variable","User Specified",

"Back into process at A time"):

PDR,PDR Value,,DATABASE(,"Variable","User Specified","PDR"):

contractor loop PreC,contractor loop PreC Value,,DATABASE(,"Variable","User Specified","contractor loop PreC"):

Costing Begin PreB,Costing Begin PreB Value,,DATABASE(,"Variable","User Specified","Costing Begin PreB"):

Costing Begin PreC,Costing Begin PreC Value,,DATABASE(,"Variable","User Specified","Costing Begin PreC"):

Program Kill time at PDR,Program Kill time at PDR Value,,DATABASE(,"Variable","User Specified",

"Program Kill time at PDR"):

Kill time at MS C decision,Kill time at MS C decision Value,,DATABASE(,"Variable","User Specified",

"Kill time at MS C decision"):

End at COA PreA,End at COA PreA Value,,DATABASE(,"Variable","User Specified","End at COA PreA"):

SDD original contract length,SDD original contract length Value,,DATABASE(,"Variable","User Specified",

"SDD original contract length"):

KPP Development signal PreB,KPP Development signal PreB Value,,DATABASE(,"Variable","User Specified",

"KPP Development signal PreB"):

SDD contract cost,SDD contract cost Value,,DATABASE(,"Variable","User Specified","SDD contract cost"):

Trades Delay,Trades Delay Value,,DATABASE(,"Variable","User Specified","Trades Delay"):

trade counter,trade counter Value,,DATABASE(,"Variable","User Specified","trade counter"):

Selected CoA Kill point,Selected CoA Kill point Value,,DATABASE(,"Variable","User Specified",
"Selected CoA Kill point"):
MS A approval attempt,MS A approval attempt Value,,DATABASE(,"Variable","User Specified","MS A approval attempt"):
DRR Success,DRR Success Value,,DATABASE(,"Variable","User Specified","DRR Success"):
PDR Rework time,PDR Rework time Value,,DATABASE(,"Variable","User Specified","PDR Rework time"):
TD final contract length,TD final contract length Value,,DATABASE(,"Variable","User Specified",
"TD final contract length"):
funding quality,funding quality Value,,DATABASE(,"Variable","User Specified","funding quality"):
MS A decision time,MS A decision time Value,,DATABASE(,"Variable","User Specified","MS A decision time"):
contractor loop,contractor loop Value,,DATABASE(,"Variable","User Specified","contractor loop"):
Early Archive,Early Archive Value,,DATABASE(,"Variable","User Specified","Early Archive"):
DRR loop,DRR loop Value,,DATABASE(,"Variable","User Specified","DRR loop"):
Back into process at C time,Back into process at C time Value,,DATABASE(,"Variable","User Specified",
"Back into process at C time"):
CPD Time,CPD Time Value,,DATABASE(,"Variable","User Specified","CPD Time"):
PreCpursuerequirements,PreCpursuerequirements Value,,DATABASE(,"Variable","User Specified",
"PreCpursuerequirements"):
PDR rework,PDR rework Value,,DATABASE(,"Variable","User Specified","PDR rework"):
CDR Rework time,CDR Rework time Value,,DATABASE(,"Variable","User Specified","CDR Rework time"):
AcqPanelTry,AcqPanelTry Value,,DATABASE(,"Variable","User Specified","AcqPanelTry"):
Kill by MDA at Concept Decision PreA,Kill by MDA at Concept Decision PreA Value,,DATABASE(,"Variable",
"User Specified","Kill by MDA at Concept Decision PreA"):
DRR Rework,DRR Rework Value,,DATABASE(,"Variable","User Specified","DRR Rework"):
Schedule quality,Schedule quality Value,,DATABASE(,"Variable","User Specified","Schedule quality"):
SVR rework,SVR rework Value,,DATABASE(,"Variable","User Specified","SVR rework"):
Finish in Sustainment,Finish in Sustainment Value,,DATABASE(,"Variable","User Specified","Finish in Sustainment"):
Kill time at AFROC joint integ PreA,Kill time at AFROC joint integ PreA Value,,DATABASE(,"Variable",
"User Specified","Kill time at AFROC joint integ PreA"):
Kill time at AFROC joint integ PreB,Kill time at AFROC joint integ PreB Value,,DATABASE(,"Variable",
"User Specified","Kill time at AFROC joint integ PreB"):

Kill time at AFROC joint integ PreC,Kill time at AFROC joint integ PreC Value,,DATABASE(,"Variable",
"User Specified","Kill time at AFROC joint integ PreC"):
Scope of Existing CCD,Scope of Existing CCD Value,,DATABASE(,"Variable","User Specified","Scope of Existing CCD"):
AFROC Count PreB,AFROC Count PreB Value,,DATABASE(,"Variable","User Specified","AFROC Count PreB"):
AFROC Count PreC,AFROC Count PreC Value,,DATABASE(,"Variable","User Specified","AFROC Count PreC"):
TRR loop,TRR loop Value,,DATABASE(,"Variable","User Specified","TRR loop"):
TD Contract End Date,TD Contract End Date Value,,DATABASE(,"Variable","User Specified","TD Contract End Date"):
CPD,CPD Value,,DATABASE(,"Variable","User Specified","CPD"):
Back into process at PreA,Back into process at PreA Value,,DATABASE(,"Variable","User Specified",
"Back into process at PreA"):
contract cost,contract cost Value,,DATABASE(,"Variable","User Specified","contract cost"):
Back into process at PreB,Back into process at PreB Value,,DATABASE(,"Variable","User Specified",
"Back into process at PreB"):
Back into process at PreC,Back into process at PreC Value,,DATABASE(,"Variable","User Specified",
"Back into process at PreC"):
StarttimeofAoA,StarttimeofAoA Value,,DATABASE(,"Variable","User Specified","StarttimeofAoA"):
System Performance Specification,System Performance Specification Value,,DATABASE(,"Variable","User Specified",
"System Performance Specification"):
Kill at begin of requirements swimlane PreB,Kill at begin of requirements swimlane PreB Value,,DATABASE(,
"Variable","User Specified","Kill at begin of requirements swimlane PreB"):
Kill at Begin of requirements swimlane PreC,Kill at Begin of requirements swimlane PreC Value,,DATABASE(,
"Variable","User Specified","Kill at Begin of requirements swimlane PreC"):
Final TD contract cost,Final TD contract cost Value,,DATABASE(,"Variable","User Specified",
"Final TD contract cost"):
TD Contract Start,TD Contract Start Value,,DATABASE(,"Variable","User Specified","TD Contract Start"):
SDD Contract Start,SDD Contract Start Value,,DATABASE(,"Variable","User Specified","SDD Contract Start"):
funding quality PreC,funding quality PreC Value,,DATABASE(,"Variable","User Specified","funding quality PreC"):

TD Contract length,TD Contract length Value,,DATABASE(,"Variable","User Specified","TD Contract length"):

KPPs Ready PreB,KPPs Ready PreB Value,,DATABASE(,"Variable","User Specified","KPPs Ready PreB"):

KPPs Ready PreC,KPPs Ready PreC Value,,DATABASE(,"Variable","User Specified","KPPs Ready PreC"):

testinglength,testinglength Value,,DATABASE(,"Variable","User Specified","testinglength"):

CompletetimeofAoA,CompletetimeofAoA Value,,DATABASE(,"Variable","User Specified","CompletetimeofAoA"):

MS B decision time,MS B decision time Value,,DATABASE(,"Variable","User Specified","MS B decision time"):

ICD Time,ICD Time Value,,DATABASE(,"Variable","User Specified","ICD Time"):

SDD contract length,SDD contract length Value,,DATABASE(,"Variable","User Specified","SDD contract length"):

TD Contract End Date Near,TD Contract End Date Near Value,,DATABASE(,"Variable","User Specified",

"TD Contract End Date Near"):

Reject in formal review preA,Reject in formal review preA Value,,DATABASE(,"Variable","User Specified",

"Reject in formal review preA"):

SDD Contract End Date,SDD Contract End Date Value,,DATABASE(,"Variable","User Specified","SDD Contract End Date"):

Waiting Period End,Waiting Period End Value,,DATABASE(,"Variable","User Specified","Waiting Period End"):

SDD Contract condition end is close,SDD Contract condition end is close Value,,DATABASE(,"Variable",

"User Specified","SDD Contract condition end is close"):

CCD,CCD Value,,DATABASE(,"Variable","User Specified","CCD"):

End TD contract,End TD contract Value,,DATABASE(,"Variable","User Specified","End TD contract"):

ACAT Level,ACAT Level Value,,DATABASE(,"Variable","User Specified","ACAT Level"):

Contract Start PreC,Contract Start PreC Value,,DATABASE(,"Variable","User Specified","Contract Start PreC"):

MS C approval attempt,MS C approval attempt Value,,DATABASE(,"Variable","User Specified","MS C approval attempt"):

Kill time at MS B decision,Kill time at MS B decision Value,,DATABASE(,"Variable","User Specified",

"Kill time at MS B decision"):

PreC Baseline,PreC Baseline Value,,DATABASE(,"Variable","User Specified","PreC Baseline"):

Kill time at AFROC indep PreA,Kill time at AFROC indep PreA Value,,DATABASE(,"Variable","User Specified",

"Kill time at AFROC indep PreA"):

CDR,CDR Value,,DATABASE(,"Variable","User Specified","CDR"):
EOA success,EOA success Value,,DATABASE(,"Variable","User Specified","EOA success"):
ICD,ICD Value,,DATABASE(,"Variable","User Specified","ICD"):
Kill time at AFROC indep PreB,Kill time at AFROC indep PreB Value,,DATABASE(,"Variable","User Specified",
"Kill time at AFROC indep PreB"):
Kill time at AFROC indep preC,Kill time at AFROC indep preC Value,,DATABASE(,"Variable","User Specified",
"Kill time at AFROC indep preC"):
Back into process at B time,Back into process at B time Value,,DATABASE(,"Variable","User Specified",
"Back into process at B time"):
MS C decision time,MS C decision time Value,,DATABASE(,"Variable","User Specified","MS C decision time"):
RequirementPathTrackPreB,RequirementPathTrackPreB Value,,DATABASE(,"Variable","User Specified",
"RequirementPathTrackPreB"):
Kill at AFROC joint interest PreA,Kill at AFROC joint interest PreA Value,,DATABASE(,"Variable","User Specified",
"Kill at AFROC joint interest PreA"):
RequirementPathTrackPreC,RequirementPathTrackPreC Value,,DATABASE(,"Variable","User Specified",
"RequirementPathTrackPreC"):
Program Kill Time at CDR,Program Kill Time at CDR Value,,DATABASE(,"Variable","User Specified",
"Program Kill Time at CDR"):
contract start,contract start Value,,DATABASE(,"Variable","User Specified","contract start"):
RequirementPathTrack,RequirementPathTrack Value,,DATABASE(,"Variable","User Specified","RequirementPathTrack"):
CCD Time,CCD Time Value,,DATABASE(,"Variable","User Specified","CCD Time"):
Acq Plan PreB,Acq Plan PreB Value,,DATABASE(,"Variable","User Specified","Acq Plan PreB");

REPLICATE, 48500,,,Yes,Yes,,,,24,Days,No,No,,,No,No;

ENTITIES: Event Happens 2,Picture.Telephone,0.0,0.0,0.0,0.0,0.0,0.0,AUTOSTATS(Yes,,):
Idea,Picture.Airplane,0.0,1,0.0,0.0,0.0,0.0,AUTOSTATS(Yes,,):
ProgramreviewpreB,Picture.Red Ball,0.0,0.0,0.0,0.0,0.0,0.0,AUTOSTATS(Yes,,):
ProgramreviewpreC,Picture.Yellow Ball,0.0,0.0,0.0,0.0,0.0,0.0,AUTOSTATS(Yes,,):
Event Happens,Picture.Letter,0.0,0.0,0.0,0.0,0.0,0.0,AUTOSTATS(Yes,,);

Enterprise Acquisition Process Model

Analyst:	Robb Wirthlin
Filename:	I:\Arena model iteration Final without instrumentation.doe
Report Date:	8/4/2009 1:08:28 PM
Replications:	48500
Start Date/Time:	2/25/2009 2:53:27 PM
Warm Up Period:	0.0
Replication Length:	Infinite
Base Time Units:	Days
Init Stats Between Replications:	True
Init Sytem Between Replications:	True
Model Description:	None

Data Module "ACAT Level" ID: "Variable 4"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	ACAT Level
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AFROC Count" ID: "Variable 5"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	AFROC Count
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AFROC Count PreB" ID: "Variable 20"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	AFROC Count PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AFROC Count PreC" ID: "Variable 43"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	AFROC Count PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Acq Plan PreB" ID: "Variable 36"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Acq Plan PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Acq Plan PreC" ID: "Variable 56"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Acq Plan PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AcqPanelTry" ID: "Variable 11"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	AcqPanelTry

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AoA flag" ID: "Variable 8"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	AoA flag
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "AoA killed" ID: "Variable 9"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	AoA killed
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Available" ID: "Calendar State 1"
Type: Calendar State
From template: BasicProcess
Module Description: None

Operands:

Arena Imported Name:	
Color:	51200
FDM Id:	900000
FDM Name:	
Hatch Color:	0
Hatch Pattern:	0
Name:	Available
Usage Type:	Capacity
Value:	1

Data Module "Back into process at A time" ID: "Variable 83"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at A time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Back into process at B time" ID: "Variable 89"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at B time
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "Back into process at C time" ID: "Variable 87"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at C time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Back into process at PreA" ID: "Variable 84"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at PreA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Back into process at PreB" ID: "Variable 90"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	

Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Back into process at PreC" ID: "Variable 88"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Back into process at PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Bring the processes together PreC.Queue" ID: "Queue 52"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Bring the processes together PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Bring three processes together PreB.Queue" ID: "Queue 22"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Bring three processes together PreB.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "CCD" ID: "Variable 21"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CCD
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "CCD Time" ID: "Variable 22"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CCD Time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "CDR" ID: "Variable 59"
Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CDR
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "CDR Rework time" ID: "Variable 61"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CDR Rework time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "CPD" ID: "Variable 44"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CPD

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "CPD Time" ID: "Variable 45"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CPD Time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Complete predecessor activities preA.Queue" ID: "Queue 7"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Complete predecessor activities preA.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Complete predecessor activities preB.Queue" ID: "Queue 25"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Complete predecessor activities preB.Queue
Report Statistics	Yes
Shared	No

Type:	FIFO

Data Module "Complete predecessor activities preC.Queue" ID: "Queue 55"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Complete predecessor activities preC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "CompletetimeofAoA" ID: "Variable 12"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	CompletetimeofAoA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Contract Start PreC" ID: "Variable 50"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Contract Start PreC

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Costing Begin PreB" ID: "Variable 37"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Costing Begin PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Costing Begin PreC" ID: "Variable 57"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Costing Begin PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "DRR Rework" ID: "Variable 62"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	DRR Rework
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "DRR Success" ID: "Variable 66"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	DRR Success
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "DRR loop" ID: "Variable 67"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	DRR loop
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "Direct entry into SDD phase" ID: "Variable 113"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Direct entry into SDD phase
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Direct entry to PreC Phase" ID: "Variable 132"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Direct entry to PreC Phase
Report Statistics	No
Rows:	
Usage:	InputOutput

Data Module "EOA success" ID: "Variable 35"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	

Data Type:	Real
Description:	
I/O Point	No
Name:	EOA success
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Early Archive" ID: "Variable 77"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Early Archive
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "End SDD contract" ID: "Variable 116"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	End SDD contract
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"End TD contract" ID: "Variable 114"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	End TD contract
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"End at COA PreA" ID: "Variable 92"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	End at COA PreA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"Engineering Development model" ID: "Variable 76"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	Engineering Development model
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Event Happens" ID: "Entity 7"

Type: Entity

From template: BasicProcess

Module Description: None

Operands:

Entity Type:	Event Happens
Holding Cost / Hour:	0.0
Initial Picture:	Picture.Letter
Non-Value Added:	0.0
Other:	0.0
Report Statistics	Yes
Transfer:	0.0
Value Added:	0.0
Waiting:	0.0

Data Module "Event Happens 2" ID: "Entity 11"

Type: Entity

From template: BasicProcess

Module Description: None

Operands:

Entity Type:	Event Happens 2
Holding Cost / Hour:	0.0
Initial Picture:	Picture.Telephone
Non-Value Added:	0.0
Other:	0.0
Report Statistics	Yes
Transfer:	0.0
Value Added:	0.0
Waiting:	0.0

Data Module "Final TD contract cost" ID: "Variable 115"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Final TD contract cost
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Finish in Sustainment" ID: "Variable 82"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Finish in Sustainment
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "ICD" ID: "Variable 7"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	ICD

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "ICD Time" ID: "Variable 6"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	ICD Time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Idea" ID: "Entity 2"

Type: Entity

From template: BasicProcess

Module Description: None

Operands:

Entity Type:	Idea
Holding Cost / Hour:	0.0
Initial Picture:	Picture.Airplane
Non-Value Added:	0.0
Other:	0.0
Report Statistics	Yes
Transfer:	0.0
Value Added:	1
Waiting:	0.0

Data Module "KPP Development signal PreB" ID: "Variable 123"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	KPP Development signal PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "KPPs Ready PreB" ID: "Variable 40"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	KPPs Ready PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "KPPs Ready PreC" ID: "Variable 70"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	KPPs Ready PreC
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "KPPs arrive from Requirements PreC.Queue" ID: "Queue 59"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	KPPs arrive from Requirements PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "KPPs arrive from Requirements.Queue" ID: "Queue 27"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	KPPs arrive from Requirements.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Kill at AFROC joint interest PreA" ID: "Variable 107"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill at AFROC joint interest PreA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill at Begin of requirements swimlane PreC" ID: "Variable 97"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill at Begin of requirements swimlane PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill at MS A decision time" ID: "Variable 94"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill at MS A decision time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill at begin of requirements swimlane PreB" ID: "Variable 95"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	Kill at begin of requirements swimlane PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill by MDA at Concept Decision PreA" ID: "Variable 93"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill by MDA at Concept Decision PreA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC indep PreA" ID: "Variable 101"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC indep PreA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC indep PreB" ID: "Variable 102"
Type: Variable

From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC indep PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"Kill time at AFROC indep preC" ID: "Variable 103"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC indep preC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"Kill time at AFROC joint integ PreA" ID: "Variable 104"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC joint integ PreA

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC joint integ PreB" ID: "Variable 105"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC joint integ PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC joint integ PreC" ID: "Variable 106"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC joint integ PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC joint interest PreC" ID: "Variable 109"
Type: Variable
From template: BasicProcess
Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC joint interest PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at AFROC joint interest preB" ID: "Variable 108"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at AFROC joint interest preB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Kill time at MS B decision" ID: "Variable 96"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at MS B decision
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "Kill time at MS C decision" ID: "Variable 98"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Kill time at MS C decision
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Killed at AoA" ID: "Variable 91"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Killed at AoA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS A approval attempt" ID: "Variable 14"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	

Data Type:	Real
Description:	
I/O Point	No
Name:	MS A approval attempt
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS A decision time" ID: "Variable 15"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	MS A decision time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS B approval attempt" ID: "Variable 30"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	MS B approval attempt
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS B decision time" ID: "Variable 29"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	MS B decision time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS C approval attempt" ID: "Variable 73"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	MS C approval attempt
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "MS C decision time" ID: "Variable 72"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	MS C decision time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Needs AOA ICD OK" ID: "Variable 133"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Needs AOA ICD OK
Report Statistics	No
Rows:	
Usage:	InputOutput

Data Module "PDR" ID: "Variable 58"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PDR
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "PDR Rework time" ID: "Variable 60"

Type: Variable

From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PDR Rework time
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "PDR rework" ID: "Variable 118"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PDR rework
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Pre MS B contract length" ID: "Variable 16"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Pre MS B contract length

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "PreB CCD OK" ID: "Variable 131"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PreB CCD OK
Report Statistics	No
Rows:	
Usage:	InputOutput

Data Module "PreBpursuerequirements" ID: "Variable 17"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PreBpursuerequirements
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "PreC Baseline" ID: "Variable 71"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PreC Baseline
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "PreCpursuerequirements" ID: "Variable 41"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	PreCpursuerequirements
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Preferred System Concept" ID: "Variable 75"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Preferred System Concept
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "Processes come together PreB.Queue" ID: "Queue 20"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Processes come together PreB.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Processes come together PreC.Queue" ID: "Queue 51"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Processes come together PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Processes come together.Queue" ID: "Queue 5"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Processes come together.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Program Kill Time at CDR" ID: "Variable 100"
Type: Variable
From template: BasicProcess
Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Program Kill Time at CDR
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Program Kill time at PDR" ID: "Variable 99"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Program Kill time at PDR
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "ProgramreviewpreB" ID: "Entity 5"

Type: Entity

From template: BasicProcess

Module Description: None

Operands:

Entity Type:	ProgramreviewpreB
Holding Cost / Hour:	0.0
Initial Picture:	Picture.Red Ball
Non-Value Added:	0.0
Other:	0.0
Report Statistics	Yes
Transfer:	0.0
Value Added:	0.0

Waiting:	0.0

Data Module "ProgramreviewpreC" ID: "Entity 8"
Type: Entity
From template: BasicProcess
Module Description: None
Operands:

Entity Type:	ProgramreviewpreC
Holding Cost / Hour:	0.0
Initial Picture:	Picture.Yellow Ball
Non-Value Added:	0.0
Other:	0.0
Report Statistics	Yes
Transfer:	0.0
Value Added:	0.0
Waiting:	0.0

Data Module "Receipt of approved CCD.Queue" ID: "Queue 29"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Receipt of approved CCD.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Receipt of approved CPD.Queue" ID: "Queue 58"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Receipt of approved CPD.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Reject in formal review preA" ID: "Variable 81"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Reject in formal review preA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "RequirementPathTrack" ID: "Variable 1"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	RequirementPathTrack
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "RequirementPathTrackPreB" ID: "Variable 19"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	RequirementPathTrackPreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "RequirementPathTrackPreC" ID: "Variable 42"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	RequirementPathTrackPreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Requires AoA but not ICD" ID: "Variable 112"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Requires AoA but not ICD
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD Contract End Date" ID: "Variable 49"
Type: Variable

From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD Contract End Date
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"SDD Contract Start" ID: "Variable 46"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD Contract Start
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module	"SDD Contract condition end is close" ID: "Variable 121"
Type:	Variable
From template:	BasicProcess
Module Description:	None
Operands:	

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD Contract condition end is close

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD Final contract cost" ID: "Variable 117"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD Final contract cost
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD Final contract length" ID: "Variable 119"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD Final contract length
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD contract cost" ID: "Variable 47"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD contract cost
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD contract length" ID: "Variable 53"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD contract length
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "SDD original contract length" ID: "Variable 48"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SDD original contract length
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "SVR rework" ID: "Variable 69"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	SVR rework
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Schedule quality" ID: "Variable 32"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Schedule quality
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Schedule quality PreC" ID: "Variable 51"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	

Data Type:	Real
Description:	
I/O Point	No
Name:	Schedule quality PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Scope of Existing CCD" ID: "Variable 111"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Scope of Existing CCD
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Selected CoA Kill point" ID: "Variable 10"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Selected CoA Kill point
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Start AoA flag" ID: "Variable 124"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Start AoA flag
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "StarttimeofAoA" ID: "Variable 13"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	StarttimeofAoA
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "System Performance Specification" ID: "Variable 74"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	

I/O Point	No
Name:	System Performance Specification
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "T and E Start PreB" ID: "Variable 39"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	T and E Start PreB
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD Contract End Date" ID: "Variable 128"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD Contract End Date
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD Contract End Date Near" ID: "Variable 125"

Type: Variable

From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD Contract End Date Near
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD Contract Start" ID: "Variable 129"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD Contract Start
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD Contract length" ID: "Variable 127"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD Contract length

Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD final contract length" ID: "Variable 126"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD final contract length
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TD original contract length" ID: "Variable 130"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TD original contract length
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TRR Delay" ID: "Variable 63"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TRR Delay
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "TRR loop" ID: "Variable 68"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	TRR loop
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "Trades Delay" ID: "Variable 64"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Trades Delay
Report Statistics	Yes
Rows:	

Usage:	InputOutput

Data Module "Unavailable" ID: "Calendar State 2"

Type: Calendar State

From template: BasicProcess

Module Description: None

Operands:

Arena Imported Name:	
Color:	200
FDM Id:	900001
FDM Name:	
Hatch Color:	0
Hatch Pattern:	0
Name:	Unavailable
Usage Type:	Capacity
Value:	0

Data Module "Wait for AoA Start.Queue" ID: "Queue 61"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for AoA Start.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for Baseline set PreC.Queue" ID: "Queue 54"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for Baseline set PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for CDR.Queue" ID: "Queue 49"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Wait for CDR.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for EOA completion.Queue" ID: "Queue 19"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Wait for EOA completion.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for PDR.Queue" ID: "Queue 47"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Wait for PDR.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for RFP Coord Process to end.Queue" ID: "Queue 57"
Type: Queue
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Name:	Wait for RFP Coord Process to end.Queue

Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for T and E Start.Queue" ID: "Queue 38"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for T and E Start.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for T and E signal.Queue" ID: "Queue 31"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for T and E signal.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for contract complete.Queue" ID: "Queue 36"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for contract complete.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for signal for Costing and Acquisition Planning activities PreB.Queue" ID: "Queue 40"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for signal for Costing and Acquisition Planning activities PreB.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for signal for Costing and Acquisition Planning activities PreC.Queue" ID: "Queue 46"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for signal for Costing and Acquisition Planning activities PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Wait for successful Design Readiness Review Indep PreC.Queue" ID: "Queue 43"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	Wait for successful Design Readiness Review Indep PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module	"Wait for successful Design Readiness Review Interest PreC.Queue" ID: "Queue 44"
Type:	Queue
From template:	BasicProcess
Module Description:	None
Operands:	

Attribute Name:	Attribute 1
Name:	Wait for successful Design Readiness Review Interest PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module	"Wait for successful Design Readiness Review Joint PreC.Queue" ID: "Queue 45"
Type:	Queue
From template:	BasicProcess
Module Description:	None
Operands:	

Attribute Name:	Attribute 1
Name:	Wait for successful Design Readiness Review Joint PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module	"Wait until both complete preA.Queue" ID: "Queue 3"
Type:	Queue
From template:	BasicProcess
Module Description:	None
Operands:	

Attribute Name:	Attribute 1
Name:	Wait until both complete preA.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "Waiting Period End" ID: "Variable 78"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	Waiting Period End
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "contract cost" ID: "Variable 31"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	contract cost
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "contract start" ID: "Variable 33"
Type: Variable
From template: BasicProcess
Module Description: None
Operands:

Clear Option:	System
Columns:	
Data Type:	Real

Description:	
I/O Point	No
Name:	contract start
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "contractor loop" ID: "Variable 27"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	contractor loop
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "contractor loop PreC" ID: "Variable 55"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	contractor loop PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "for Affordability Assessment PreB.Queue" ID: "Queue 24"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	for Affordability Assessment PreB.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "for Affordability Assessment PreC.Queue" ID: "Queue 50"

Type: Queue

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Name:	for Affordability Assessment PreC.Queue
Report Statistics	Yes
Shared	No
Type:	FIFO

Data Module "funding quality" ID: "Variable 26"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	funding quality
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "funding quality PreC" ID: "Variable 52"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	funding quality PreC
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "testinglength" ID: "Variable 28"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	testinglength
Report Statistics	Yes
Rows:	
Usage:	InputOutput

Data Module "trade counter" ID: "Variable 65"

Type: Variable

From template: BasicProcess

Module Description: None

Operands:

Clear Option:	System
Columns:	
Data Type:	Real
Description:	
I/O Point	No
Name:	trade counter
Report Statistics	Yes

Rows:	
Usage:	InputOutput

Module "ACAT 1 Preparation for Acquisition Panels preA" ID: "Process 76"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	40
Name:	ACAT 1 Preparation for Acquisition Panels preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	56

Module "ACAT 1 Preparation for Acquisition Panels preB" ID: "Process 143"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	40
Name:	ACAT 1 Preparation for Acquisition Panels preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard

Units:	Days
Value	56

Module "ACAT 1 funding" ID: "Decide 49"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	ACAT 1 funding
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "ACAT I Contract Length" ID: "Assign 39"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	ACAT I Contract Length

Module "ACAT I Contract Length PreC" ID: "Assign 91"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	ACAT I Contract Length PreC

Module "ACAT I prepare for Acquisition panels" ID: "Process 68"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D

Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	40
Name:	ACAT I prepare for Acquisition panels
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "ACAT I time delay" ID: "Process 66"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	ACAT I time delay
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "ACAT I time delay PreB" ID: "Process 133"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D

Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	ACAT I time delay PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	120

Module "ACAT I time delay PreC" ID: "Process 221"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	ACAT I time delay PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	120

Module "ACAT II Contract Length" ID: "Assign 40"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	ACAT II Contract Length

Module	"ACAT II Contract Length PreC" ID: "Assign 92"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT II Contract Length PreC

Module	"ACAT II or ACAT III funding" ID: "Decide 50"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	ACAT II or ACAT III funding
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module	"ACAT II or ACAT III time delay" ID: "Process 67"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	240
Minimum:	90
Name:	ACAT II or ACAT III time delay
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Standard
Units:	Days
Value	150

Module "ACAT II or ACAT III time delay PreB" ID: "Process 134"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	270
Minimum:	90
Name:	ACAT II or ACAT III time delay PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	225

Module "ACAT II or ACAT III time delay PreC" ID: "Process 222"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	270
Minimum:	90
Name:	ACAT II or ACAT III time delay PreC
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Standard
Units:	Days
Value	225

Module "ACAT II or III Preparation for Acquisition Panels" ID: "Process 77"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	ACAT II or III Preparation for Acquisition Panels
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "ACAT II or III Preparation for Acquisition Panels preB" ID: "Process 144"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	ACAT II or III Preparation for Acquisition Panels preB
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "ACAT II or III Prepare for Acquisition Panels preA" ID: "Process 69"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	15
Name:	ACAT II or III Prepare for Acquisition Panels preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "ACAT III Contract Length" ID: "Assign 41"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	ACAT III Contract Length

Module "ACAT III Contract Length PreC" ID: "Assign 93"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	ACAT III Contract Length PreC

Module "ACAT level check for Acquisition swimlane preA" ID: "Decide 57"

Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Variable
Is:	==
Name:	ACAT level check for Acquisition swimlane preA
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module	"ACAT level check preA" ID: "Decide 60"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Variable
Is:	==
Name:	ACAT level check preA
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module	"ACAT level check preB" ID: "Decide 111"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1

If:	Variable
Is:	==
Name:	ACAT level check preB
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "ACAT level preA" ID: "Decide 56"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	ACAT level preA
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "ACAT level preB" ID: "Decide 107"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	ACAT level preB
Named:	Attribute 1

Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "ACAT level preC" ID: "Decide 180"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	ACAT level preC
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Acquisition Panels" ID: "Process 78"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	15
Name:	Acquisition Panels
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Acquisition Panels PreB" ID: "Process 145"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	15
Name:	Acquisition Panels PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Acquisition Panels PreC" ID: "Process 228"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	15
Name:	Acquisition Panels PreC
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Acquisition Panels preparation PreC" ID: "Process 271"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	ACAT level==1*TRIA(40,56,60)+ACAT level==2*TRIA(15,25,30) + ACAT level==3*TRIA(15,25,30)
Maximum:	1.5
Minimum:	.5
Name:	Acquisition Panels preparation PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Acquisition Planning Activities PreB" ID: "Process 157"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Acquisition Planning Activities PreB

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Acquisition Planning Activities PreB

Module "ACAT I Acquisition Planning PreB" ID: "Process 158"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	250
Minimum:	120
Name:	ACAT I Acquisition Planning PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	240

Module "ACAT II Or III Acquisition Planning PreB" ID: "Process 159"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	250
Minimum:	120
Name:	ACAT II Or III Acquisition Planning PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	185

Module "Acq planning activities depend upon ACAT level preB" ID: "Decide 130"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Acq planning activities depend upon ACAT level preB
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Acquisition Planning Activities PreC" ID: "Process 234"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5

Name:	Acquisition Planning Activities PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Acquisition Planning Activities PreC

Module "ACAT I Acquisition Planning PreC" ID: "Process 235"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	250
Minimum:	120
Name:	ACAT I Acquisition Planning PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	240

Module "ACAT II Or III Acquisition Planning PreC" ID: "Process 236"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular

Expression:	1
Maximum:	250
Minimum:	120
Name:	ACAT II Or III Acquisition Planning PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	185

Module "Acq planning activities depend upon ACAT level preC" ID: "Decide 193"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Acq planning activities depend upon ACAT level preC
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Acquisition panels preA" ID: "Process 70"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35

Minimum:	15
Name:	Acquisition panels preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Add counter through feedback path" ID: "Assign 1"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Add counter through feedback path

Module "Add counter through feedback path PreB" ID: "Assign 25"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Add counter through feedback path PreB

Module "Add counter through feedback path PreC" ID: "Assign 81"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Add counter through feedback path PreC

Module "Additional Adjustments" ID: "Decide 142"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Additional Adjustments
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "Affordability Assessment PreB" ID: "Process 175"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	120
Name:	Affordability Assessment PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "Affordability Assessment PreC" ID: "Process 249"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	120
Name:	Affordability Assessment PreC

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "Analysis" ID: "Process 62"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	2
Name:	Analysis
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	7

Module "Analysis of Alternatives" ID: "Process 61"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	730
Minimum:	270
Name:	Analysis of Alternatives

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	600

Module "Approve Selected CoA" ID: "Decide 54"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Approve Selected CoA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Archive for rejected ideas in formal review" ID: "Dispose 32"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Archive for rejected ideas in formal review
Record Entity Statistics	No

Module "Assembly" ID: "Process 264"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA

Delay Type:	Expression
Expression:	TRIA(.06*SDD original contract length, .1*SDD original contract length, .11*SDD original contract length)
Maximum:	1.5
Minimum:	.5
Name:	Assembly
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Assign Beginning simulation time" ID: "Assign 147"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Assign Beginning simulation time

Module "Assign CDR Rework time" ID: "Assign 144"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Assign CDR Rework time

Module "Assign CDR1 Cost and Schedule Penalty" ID: "Assign 115"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Assign CDR1 Cost and Schedule Penalty

Module "Assign CDR2 Cost and Schedule Penalty" ID: "Assign 116"
Type: Assign
From template: BasicProcess
Module Description: None

Operands:	Name: Assign CDR2 Cost and Schedule Penalty

Module	"Assign KPP Development complete PreB" ID: "Assign 146"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign KPP Development complete PreB

Module	"Assign PDR1 Cost and Schedule Penalty" ID: "Assign 112"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign PDR1 Cost and Schedule Penalty

Module	"Assign PDR1 rework time" ID: "Assign 142"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign PDR1 rework time

Module	"Assign PDR2 Cost and Schedule Penalty" ID: "Assign 113"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign PDR2 Cost and Schedule Penalty

Module	"Assign PDR2 rework" ID: "Assign 143"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign PDR2 rework

Module	"Assign PDR3 Cost and Schedule Penalty" ID: "Assign 114"
Type:	Assign
From template:	BasicProcess
Module Description:	None

Operands:	Name: Assign PDR3 Cost and Schedule Penalty

Module	"Assign Program Kill at CDR" ID: "Assign 136"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign Program Kill at CDR

Module	"Assign Set close to end SDD contract condition" ID: "Assign 145"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign Set close to end SDD contract condition

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Module	"Assign cost penalty for DRR rework" ID: "Assign 119"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign cost penalty for DRR rework

Module	"Assign counter to MDA loop" ID: "Assign 21"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign counter to MDA loop

Module	"Assign counter to MDA loop preB" ID: "Assign 37"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign counter to MDA loop preB

Module	"Assign counter to MDA loop preC" ID: "Assign 89"
Type:	Assign
From template:	BasicProcess
Module Description:	None

Operands:	Name: Assign counter to MDA loop preC

Module	"Assign final SDD cost" ID: "Assign 141"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign final SDD cost

Module	"Assign final contract cost" ID: "Assign 140"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign final contract cost

Module	"Assign program kill at PDR" ID: "Assign 135"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Assign program kill at PDR

Module	"Begin Testing ACAT II or III PreB" ID: "Decide 135"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Expression
Is:	<=
Name:	Begin Testing ACAT II or III PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE.((0.85*TD original contract length) + TD Contract

	Start)

Module "Begin Testing PreB" ID: "Decide 133"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Expression
Is:	>=
Name:	Begin Testing PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE. ((0.75*TD original contract length) + TD Contract Start)

Module "Bring the processes together PreC" ID: "Batch 17"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Bring the processes together PreC
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Bring three processes together PreB" ID: "Batch 12"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	3
Name:	Bring three processes together PreB
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "CDR 2" ID: "Decide 216"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	CDR 2
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "CDR 3" ID: "Decide 217"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	CDR 3
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99

Row:	1
Type:	With
Value:	1

Module "CDR Rework PreC" ID: "Process 257"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	CDR Rework time
Maximum:	1.5
Minimum:	.5
Name:	CDR Rework PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "CDR delay 2 PreC" ID: "Process 258"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	.5*CDR Rework time
Maximum:	1.5
Minimum:	.5
Name:	CDR delay 2 PreC
Priority:	2
Report Statistics	No
Std Dev:	.2

Type:	Standard
Units:	Days
Value	1

Module "CDR success??" ID: "Decide 215"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	CDR success??
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "Change CDR variable" ID: "Assign 111"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Change CDR variable

Module "Change Contract or Rescope contract PreB" ID: "Process 156"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	15

Name:	Change Contract or Rescope contract PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	20

Module "Change Contract or Rescope contract PreC" ID: "Process 233"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	15
Name:	Change Contract or Rescope contract PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	20

Module "Change PDR variable" ID: "Assign 110"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Change PDR variable

Module "Check Condition" ID: "Decide 14"
Type: Decide
From template: BasicProcess
Module Description: None

Operands:

Column:	1
If:	Variable
Is:	>=
Name:	Check Condition
Named:	Attribute 1
Named:	Entity 1
Named:	RequirementPathTrack
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check Condition PreB" ID: "Decide 72"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	>=
Name:	Check Condition PreB
Named:	Attribute 1
Named:	Entity 1
Named:	RequirementPathTrack
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check Condition PreC" ID: "Decide 152"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	>=
Name:	Check Condition PreC

Named:	Attribute 1
Named:	Entity 1
Named:	RequirementPathTrack
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check DRR looping condition" ID: "Decide 223"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check DRR looping condition
Named:	Attribute 1
Named:	Entity 1
Named:	DRR loop
Percent True	50
Row:	1
Type:	If
Value:	0

Module "Check TRR looping condition" ID: "Decide 224"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check TRR looping condition
Named:	Attribute 1
Named:	Entity 1
Named:	TRR loop
Percent True	50

Row:	1
Type:	If
Value:	0

Module "Check for ACAT level for potential AoA" ID: "Decide 48"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for ACAT level for potential AoA
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check for ACAT level preA" ID: "Decide 21"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for ACAT level preA
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check for AoA" ID: "Decide 52"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Check for AoA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf
Value:	1

Module "Check for previous MDA decision attempt preA" ID: "Decide 62"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous MDA decision attempt preA
Named:	Attribute 1
Named:	Entity 1
Named:	MS A approval attempt
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check for previous MDA decision attempt preB" ID: "Decide 113"
Type: Decide
From template: BasicProcess
Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous MDA decision attempt preB
Named:	Attribute 1
Named:	Entity 1
Named:	MS B approval attempt
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check for previous MDA decision attempt preC" ID: "Decide 183"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous MDA decision attempt preC
Named:	Attribute 1
Named:	Entity 1
Named:	MS C approval attempt
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check for previous path" ID: "Decide 59"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path

Named:	Attribute 1
Named:	Entity 1
Named:	AcqPanelTry
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Check looping condition" ID: "Decide 222"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check looping condition
Named:	Attribute 1
Named:	Entity 1
Named:	trade counter
Percent True	50
Row:	1
Type:	If
Value:	0

Module "Check on conditions" ID: "Decide 65"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check on conditions
Named:	Attribute 1
Named:	Entity 1
Named:	PreBpursuerequirements
Percent True	50

Row:	1
Type:	If
Value:	1

Module "Check on conditions PreC" ID: "Decide 147"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check on conditions PreC
Named:	Attribute 1
Named:	Entity 1
Named:	PreCpursuerequirements
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Choose and recommend a selected CoA" ID: "Process 64"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	30
Name:	Choose and recommend a selected CoA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days

Value	60

Module "Combined Testing" ID: "Process 269"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(.07*SDD original contract length, 0.1*SDD original contract length, 0.11*SDD original contract length)
Maximum:	1.5
Minimum:	.5
Name:	Combined Testing
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Complete predecessor activities preA" ID: "Batch 4"
Type: Batch
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Batch Size:	3
Name:	Complete predecessor activities preA
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Complete predecessor activities preB" ID: "Batch 8"
Type: Batch
From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Complete predecessor activities preB
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Complete predecessor activities preC" ID: "Batch 16"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Complete predecessor activities preC
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Completion of contract PreB" ID: "Dispose 28"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Completion of contract PreB
Record Entity Statistics	No

Module "Completion of contract PreC" ID: "Dispose 43"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Completion of contract PreC
Record Entity Statistics	No

Module "Concept Decision and ADM" ID: "Decide 58"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Concept Decision and ADM
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Conduct AoA" ID: "Decide 53"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Conduct AoA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Continue until completion and End of process" ID: "Dispose 2"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Continue until completion and End of process

Record Entity Statistics	No

Module "Continute other Acquisition Swimlane activities preA" ID: "Separate 3"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Continute other Acquisition Swimlane activities preA
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Contract Startup PreB" ID: "Process 160"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	30
Name:	Contract Startup PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	42

Module "Contract Startup PreC" ID: "Process 237"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	30
Name:	Contract Startup PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	42

Module "Contract complete PreB" ID: "Decide 138"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Expression
Is:	<=
Name:	Contract complete PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE.TD Contract End Date || End TD contract

Module "Contract complete PreC" ID: "Decide 200"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Expression

Is:	<=
Name:	Contract complete PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE.SDD Contract End Date || End SDD contract

Module "Contract started PreB" ID: "Decide 144"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Contract started PreB
Named:	Attribute 1
Named:	Entity 1
Named:	contract start
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Contract started PreC" ID: "Decide 205"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Contract started PreC
Named:	Attribute 1
Named:	Entity 1

Named:	Contract Start PreC
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Contractor cost estimate PreB" ID: "Process 173"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	45
Name:	Contractor cost estimate PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	50

Module "Contractor cost estimate PreC" ID: "Process 247"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	45
Name:	Contractor cost estimate PreC
Priority:	2

Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	50

Module "Contractor loop counter preB" ID: "Assign 49"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Contractor loop counter preB

Module "Critical Design Review" ID: "Decide 209"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Expression
Is:	>=
Name:	Critical Design Review
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE. ((SDD contract length*0.45) + SDD Contract Start)

Module "DRR rework and delay" ID: "Process 262"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	DRR Rework

Maximum:	180
Minimum:	30
Name:	DRR rework and delay
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	150

Module "Decision to Repursue" ID: "Decide 13"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to Repursue
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	85
Row:	1
Type:	With
Value:	1

Module "Decision to Repursue PreB" ID: "Decide 71"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to Repursue PreB
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	85
Row:	1
Type:	With
Value:	1

Module "Decision to Repursue PreC" ID: "Decide 151"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to Repursue PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	85
Row:	1
Type:	With
Value:	1

Module "Decision to pursue requirements" ID: "Decide 8"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to pursue requirements
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With

Value:	1

Module "Decision to pursue requirements PreB" ID: "Decide 64"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to pursue requirements PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "Decision to pursue requirements PreC" ID: "Decide 146"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Decision to pursue requirements PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "Declare Acq Planning and Costing to Begin" ID: "Assign 73"
Type: Assign

From template:	BasicProcess
Module Description:	None
Operands:	Name: Declare Acq Planning and Costing to Begin

Module	"Declare Acq Planning and Costing to Begin PreC" ID: "Assign 108"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Declare Acq Planning and Costing to Begin PreC

Module	"Declare EOA success" ID: "Assign 72"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Declare EOA success

Module	"Declare KPPs ready for Acquisition PreB" ID: "Assign 76"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Declare KPPs ready for Acquisition PreB

Module	"Declare start of T and E PreB" ID: "Assign 75"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Declare start of T and E PreB

Module	"Delay for Protest review PreB" ID: "Process 148"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	60
Minimum:	30
Name:	Delay for Protest review PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	50

Module "Delay for Protest review PreC" ID: "Process 231"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Delay for Protest review PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	50

Module "Delay to Align Funds PreC" ID: "Process 252"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	75
Minimum:	30
Name:	Delay to Align Funds PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Delay to repeat required steps PreB" ID: "Process 273"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	60
Name:	Delay to repeat required steps PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	120

Module "Delay to repeat required steps PreC" ID: "Process 272"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	180
Minimum:	60
Name:	Delay to repeat required steps PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	120

Module "Design Readiness Review" ID: "Decide 219"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Design Readiness Review
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Determine DRR Rework" ID: "Assign 118"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine DRR Rework

Module "Determine TRR delay" ID: "Assign 120"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine TRR delay

Module "Determine contract end date" ID: "Assign 71"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine contract end date

Module "Determine contract end date PreC" ID: "Assign 106"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine contract end date PreC

Module "Determine cost and schedule penalties for TRR delays" ID: "Assign 121"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine cost and schedule penalties for TRR delays

Module "Determine cost and schedule penalties for trades delays" ID: "Assign 123"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine cost and schedule penalties for trades delays

---

Module "Determine document approval path preA" ID: "Decide 22"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine document approval path preA
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf
Value:	1

Module "Determine document approval path preB" ID: "Decide 74"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine document approval path preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf
Value:	1

Module "Determine document approval path preC" ID: "Decide 153"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine document approval path preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf

Value:	1

Module "Determine final SDD cost" ID: "Decide 226"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Determine final SDD cost
Named:	Attribute 1
Named:	Entity 1
Named:	End SDD contract
Percent True	50
Row:	1
Type:	If
Value:	0

Module "Determine path for process flow Scope Growth PreB" ID: "Decide 121"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine path for process flow Scope Growth PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	80
Row:	1
Type:	With
Value:	1

Module "Determine path for process flow Scope Growth PreC" ID: "Decide 189"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine path for process flow Scope Growth PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	80
Row:	1
Type:	With
Value:	1

Module "Determine quality values preB" ID: "Assign 46"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine quality values preB

Module "Determine quality values preC" ID: "Assign 97"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine quality values preC

Module "Determine trades delay" ID: "Assign 122"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Determine trades delay

Module "Determine type of requirements document needed" ID: "Process 5"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	14
Name:	Determine type of requirements document needed
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	118

Module "Dev testing rework and delay" ID: "Process 167"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	Dev testing rework and delay
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	90

Module "Develop AoA Plan" ID: "Process 60"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	60
Name:	Develop AoA Plan
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	75

Module "Develop AoA Plan ACAT I" ID: "Process 71"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	60
Name:	Develop AoA Plan ACAT I
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	75

Module "Develop Courses of Action" ID: "Process 63"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	Develop Courses of Action
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "Develop TandE strategy and Technology Development Strategy" ID: "Process 72"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	Develop TandE strategy and Technology Development Strategy
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	150

Module "Developmental Test and Evaluation" ID: "Process 163"

Type: Process

From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Developmental Test and Evaluation
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Developmental Test and Evaluation

Module	"ACAT I Dev testing PreB" ID: "Process 164"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(.75*testinglength , testinglength , 1.1*testinglength)
Maximum:	250
Minimum:	120
Name:	ACAT I Dev testing PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	240

Module	"ACAT II Or III Dev testing PreB" ID: "Process 165"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(.75*testinglength , testinglength , 1.1*testinglength)
Maximum:	250
Minimum:	120
Name:	ACAT II Or III Dev testing PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	185

Module	"Assign value to percentage of contract length ACAT I preB" ID: "Assign 50"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Assign value to percentage of contract length ACAT I preB

Module	"Assign value to percentage of contract length ACAT II or III preB" ID: "Assign 51"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Assign value to percentage of contract length ACAT II or III preB

Module	"Dev testing activities depend upon ACAT level preB" ID: "Decide 139"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1

If:	Variable
Is:	==
Name:	Dev testing activities depend upon ACAT level preB
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module	"Developmental system testing and Live Fire test and Operational Assessment testing" ID: "Process 267"
Type:	Process
From template:	BasicProcess
Module Description:	None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(ACAT Level==1*0.18*SDD original contract length+ACAT Level==2*0.1*SDD original contract length+ACAT Level==3*0.1*SDD original contract length,ACAT Level==1*0.25*SDD original contract length+ACAT Level==2*0.15*SDD original contract length+ACAT Level==3*0.15*SDD original contract length,ACAT Level==1*0.27*SDD original contract length+ACAT Level==2*0.17*SDD original contract length+ACAT Level==3*0.17*SDD original contract length)
Maximum:	1.5
Minimum:	.5
Name:	Developmental system testing and Live Fire test and Operational Assessment testing
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days

Value	1

Module "Dispose of event happens prior to need" ID: "Dispose 31"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Dispose of event happens prior to need
Record Entity Statistics	No

Module "Dispose of event happens prior to need PreC" ID: "Dispose 46"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Dispose of event happens prior to need PreC
Record Entity Statistics	No

Module "Dispose of program review prior to need" ID: "Dispose 30"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Dispose of program review prior to need
Record Entity Statistics	No

Module "Dispose of program review prior to need PreC" ID: "Dispose 45"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Dispose of program review prior to need PreC
Record Entity Statistics	No

Module "Draft RFP Preparation preA" ID: "Process 73"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA

Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Draft RFP Preparation preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	17

Module "Draft RFP Preparation preB" ID: "Process 140"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Draft RFP Preparation preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	17

Module "Draft RFP Preparation preC" ID: "Process 223"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA

Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Draft RFP Preparation preC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	17

Module "Draft briefing and materials" ID: "Process 11"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Draft briefing and materials
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	31

Module "Draft briefing and materials PreB" ID: "Process 82"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA

Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Draft briefing and materials PreB
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	31

Module "Draft briefing and materials PreC" ID: "Process 180"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Draft briefing and materials PreC
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	31

Module "EOA rework and delay preB" ID: "Process 170"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA

Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	30
Name:	EOA rework and delay preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	90

Module "Early Archive End" ID: "Dispose 3"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Early Archive End
Record Entity Statistics	No

Module "Early Operational Assessment" ID: "Process 166"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Early Operational Assessment
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Early Operational Assessment

Module	"Assign value to percentage of contract length for EOA preB" ID: "Assign 52"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Assign value to percentage of contract length for EOA preB

Module	"EOA PreB" ID: "Process 168"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(.75*testinglength , testinglength , 1.1*testinglength)
Maximum:	250
Minimum:	120
Name:	EOA PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	240

Module	"End Process at COA" ID: "Dispose 13"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End Process at COA
Record Entity Statistics	No

Module	"End Simulation 5" ID: "Assign 60"
Type:	Assign

From template:	BasicProcess
Module Description:	None
Operands:	Name: End Simulation 5

Module	"End Simulation 8" ID: "Assign 77"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: End Simulation 8

Module	"End Simulation 9" ID: "Assign 78"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: End Simulation 9

Module	"End Simulation PreB 4" ID: "Assign 66"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: End Simulation PreB 4

Module	"End Simulation PreC 4" ID: "Assign 104"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: End Simulation PreC 4

Module	"End Time check" ID: "Assign 18"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: End Time check

Module	"End after waiting period" ID: "Dispose 33"
Type:	Dispose
From template:	BasicProcess

Module Description:	None
Operands:	

Name:	End after waiting period
Record Entity Statistics	No

Module	"End at AoA check" ID: "Dispose 9"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End at AoA check
Record Entity Statistics	No

Module	"End at MS C" ID: "Dispose 40"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End at MS C
Record Entity Statistics	No

Module	"End of Event Happens Loop PreB" ID: "Dispose 29"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End of Event Happens Loop PreB
Record Entity Statistics	No

Module	"End of Event Happens Loop PreC" ID: "Dispose 44"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End of Event Happens Loop PreC
Record Entity Statistics	No

Module	"End of Program Management and Oversight loop" ID: "Dispose 27"
Type:	Dispose
From template:	BasicProcess
Module Description:	None

Operands:

Name:	End of Program Management and Oversight loop
Record Entity Statistics	No

Module "End of Program Management and Oversight loop PreC" ID: "Dispose 42"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	End of Program Management and Oversight loop PreC
Record Entity Statistics	No

Module "End of Program Review Loop" ID: "Dispose 24"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	End of Program Review Loop
Record Entity Statistics	No

Module "End of Program Review Loop PreC" ID: "Dispose 39"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	End of Program Review Loop PreC
Record Entity Statistics	No

Module "End of contract change path" ID: "Dispose 26"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	End of contract change path
Record Entity Statistics	No

Module "End of contract change path PreC" ID: "Dispose 41"
Type: Dispose
From template: BasicProcess
Module Description: None

Operands:	

Name:	End of contract change path PreC
Record Entity Statistics	No

Module	"End prior to start of Requirements swimlane PreB" ID: "Dispose 5"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End prior to start of Requirements swimlane PreB
Record Entity Statistics	No

Module	"End prior to start of Requirements swimlane PreC" ID: "Dispose 34"
Type:	Dispose
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End prior to start of Requirements swimlane PreC
Record Entity Statistics	No

Module	"End simulation" ID: "Assign 103"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End simulation

Module	"End simulation 1" ID: "Assign 56"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End simulation 1

Module	"End simulation 2" ID: "Assign 57"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	End simulation 2

Module	"End simulation 4" ID: "Assign 59"

Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation 4

Module "End simulation 6" ID: "Assign 61"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation 6

Module "End simulation 7" ID: "Assign 62"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation 7

Module "Engineering Development model delivery" ID: "Assign 102"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Engineering Development model delivery

Module "Entry after MS B" ID: "Assign 139"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Entry after MS B

Module "Event Happens PreB" ID: "Decide 145"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==

Name:	Event Happens PreB
Named:	Attribute 1
Named:	Entity 1
Named:	contract start
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Event Happens PreC" ID: "Decide 206"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Event Happens PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Contract Start PreC
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Fabrication" ID: "Process 263"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(.06*SDD original contract length, .1*SDD original contract length, .11*SDD original contract length)
Maximum:	1.5
Minimum:	.5

Name:	Fabrication
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Final PDR" ID: "Decide 214"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Final PDR
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Finalize RSR and calendar items" ID: "Process 15"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	21
Name:	Finalize RSR and calendar items

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module "Finalize RSR and calendar items PreB" ID: "Process 88"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	21
Name:	Finalize RSR and calendar items PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module "Finalize RSR and calendar items PreC" ID: "Process 182"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	21
Name:	Finalize RSR and calendar items PreC

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module "First time to contract completion?" ID: "Decide 225"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	First time to contract completion?
Named:	Attribute 1
Named:	Entity 1
Named:	End TD contract
Percent True	50
Row:	1
Type:	If
Value:	0

Module "For existing Program?" ID: "Decide 1"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	>=
Name:	For existing Program?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	75
Row:	1

Type:	With
Value:	1

Module "Form High Performance Team" ID: "Process 22"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	Wait
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	30
Name:	Form High Performance Team
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	41

Module "Form High Performance Team PreB" ID: "Process 90"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	Wait
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	30
Name:	Form High Performance Team PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard

Units:	Days
Value	41

Module "Form High Performance Team PreC" ID: "Process 184"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	Wait
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	30
Name:	Form High Performance Team PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	41

Module "Fully funded to 80% ICE in FYDP? PreC" ID: "Decide 179"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Fully funded to 80% ICE in FYDP? PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module	"Funding problem Contract Change Required preB" ID: "Decide 126"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Funding problem Contract Change Required preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	40
Row:	1
Type:	With
Value:	1

Module	"Funding problem Contract Change Required preC" ID: "Decide 192"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Funding problem Contract Change Required preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	40
Row:	1
Type:	With
Value:	1

Module	"Funds Available preA" ID: "Decide 55"
Type:	Decide
From template:	BasicProcess
Module Description:	None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Funds Available preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	75
Row:	1
Type:	With
Value:	1

Module "Funds Redirected" ID: "Decide 118"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Funds Redirected
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	20
Row:	1
Type:	With
Value:	1

Module "Funds Redirected PreC" ID: "Decide 188"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Funds Redirected PreC

Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	20
Row:	1
Type:	With
Value:	1

Module "Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB" ID: "Decide 106"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Funds set aside for next phase in FYDP at 80 percent of ICE amount PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "High Performance Team work preA" ID: "Process 23"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	7

Minimum:	5
Name:	High Performance Team work preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	6

Module "High Performance Team work preB" ID: "Process 91"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	7
Minimum:	5
Name:	High Performance Team work preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	6

Module "High Performance Team work preC" ID: "Process 185"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	7

Minimum:	5
Name:	High Performance Team work preC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	6

Module "In Scope of Existing document?" ID: "Decide 2"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	In Scope of Existing document?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	85
Row:	1
Type:	With
Value:	1

Module "In Scope of existing CCD" ID: "Assign 137"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	In Scope of existing CCD

Module "Independent Cost Estimate PreB" ID: "Process 174"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D

Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Independent Cost Estimate PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Independent Cost Estimate PreC" ID: "Process 248"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Independent Cost Estimate PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Independent document preA" ID: "Process 52"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D

Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Independent document preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Independent document preA

Module "AFROC Preparations indep preA" ID: "Process 57"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "AFROC decision indep preA" ID: "Decide 44"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions indep preA" ID: "Process 58"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Accomplish Post AFROC actions indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Air staff process indep preA" ID: "Process 54"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D

Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module "Check for previous path indep preA" ID: "Decide 46"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Critical comments indep preA" ID: "Decide 42"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	Critical comments indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity indep preA" ID: "Decide 45"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Death at AFROC indep preA" ID: "Dispose 12"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Death at AFROC indep preA
Record Entity Statistics	Yes

Module "Draft document indep preA" ID: "Process 53"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End simulation preA 1" ID: "Assign 129"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	End simulation preA 1

Module "Hold for a year later in process indep preA" ID: "Process 56"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days

Value	300

Module "MAJCOM approval indep preA" ID: "Decide 43"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions indep preA" ID: "Decide 47"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions indep preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 20" ID: "Record 20"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 20
Counter Set Name:	Counter Set 1
Name:	Record 20
Record into Set	No
Set Index:	1
Tally Name:	Record 20
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Set tracking indep PreA" ID: "Assign 13"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set tracking indep PreA

Module "comment resolution indep preA" ID: "Process 55"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution indep preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Independent document preB" ID: "Process 120"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Independent document preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Independent document preB

Module "AFROC Preparations indep preB" ID: "Process 125"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations indep preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard

Units:	Days
Value	45

Module "AFROC decision indep preB" ID: "Decide 96"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions indep preB" ID: "Process 126"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Accomplish Post AFROC actions indep preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module	"Air staff process indep preB" ID: "Process 122"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process indep preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module	"Check for previous path indep preB" ID: "Decide 98"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count PreB
Percent True	50
Row:	1
Type:	If
Value:	1

Module	"Critical comments indep preB" ID: "Decide 94"

Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical comments indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity indep preB" ID: "Decide 97"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Death at AFROC indep preB" ID: "Dispose 20"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC indep preB

Record Entity Statistics	Yes

Module "Draft document indep preB" ID: "Process 121"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document indep preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End simulation preB 1" ID: "Assign 63"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation preB 1

Module "Hold for a year later in process indep preB" ID: "Process 124"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270

Name:	Hold for a year later in process indep preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "MAJCOM approval indep preB" ID: "Decide 95"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions indep preB" ID: "Decide 99"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions indep preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25

Row:	1
Type:	With
Value:	1

Module "Record 23" ID: "Record 23"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 23
Counter Set Name:	Counter Set 1
Name:	Record 23
Record into Set	No
Set Index:	1
Tally Name:	Record 23
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Set tracking indep PreB" ID: "Assign 29"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set tracking indep PreB

Module "comment resolution indep preB" ID: "Process 123"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution indep preB

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Independent document preC" ID: "Process 214"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Independent document preC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Independent document preC

Module "AFROC Preparations indep preC" ID: "Process 219"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	60
Minimum:	30
Name:	AFROC Preparations indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "AFROC decision indep preC" ID: "Decide 175"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision indep preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions indep preC" ID: "Process 220"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1

Name:	Accomplish Post AFROC actions indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Air staff process indep preC" ID: "Process 216"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module "Check for previous path indep preC" ID: "Decide 177"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path indep preC
Named:	Attribute 1
Named:	Entity 1

Named:	AFROC Count PreC
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Critical comments indep preC" ID: "Decide 173"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical comments indep preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity indep preC" ID: "Decide 176"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity indep preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With

Value:	1

Module "Death at AFROC indep preC" ID: "Dispose 37"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC indep preC
Record Entity Statistics	Yes

Module "Draft document indep preC" ID: "Process 215"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End simulation preC 1" ID: "Assign 88"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation preC 1

Module "Hold for a year later in process indep preC" ID: "Process 218"
Type: Process
From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "MAJCOM approval indep preC" ID: "Decide 174"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval indep preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions indep preC" ID: "Decide 178"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1

If:	Entity Type
Is:	>=
Name:	Post AFROC actions indep preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 26" ID: "Record 26"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 26
Counter Set Name:	Counter Set 1
Name:	Record 26
Record into Set	No
Set Index:	1
Tally Name:	Record 26
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Set tracking indep PreC" ID: "Assign 87"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set tracking indep PreC

Module "Wait for successful Design Readiness Review Indep PreC" ID: "Hold 16"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	DRR Success==1
Expression:	
Limit:	
Name:	Wait for successful Design Readiness Review Indep PreC
Queue Name:	Wait for successful Design Readiness Review Indep PreC.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for successful Design Readiness Review Indep PreC Set.Queue
Type:	Scan
Wait for Value:	1

Module "comment resolution indep preC" ID: "Process 217"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution indep preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Initial Rate Production Baseline" ID: "Process 270"
Type: Process
From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	35
Minimum:	15
Name:	Initial Rate Production Baseline
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Integrated Testing" ID: "Process 265"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(ACAT Level==1*0.15*SDD original contract length+ACAT Level==2*0.07*SDD original contract length+ACAT Level==3*0.07*SDD original contract length,ACAT Level==1*0.25*SDD original contract length+ACAT Level==2*0.1*SDD original contract length+ACAT Level==3*0.1*SDD original contract length,ACAT Level==1*0.26*SDD original contract length+ACAT Level==2*0.11*SDD original contract length+ACAT Level==3*0.11*SDD original contract length)
Maximum:	1.5
Minimum:	.5
Name:	Integrated Testing
Priority:	2
Report Statistics	No
Std Dev:	.2

Type:	Standard
Units:	Days
Value	1

Module "Joint Integration PreA" ID: "Process 39"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Integration PreA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Integration PreA

Module "AFROC Preparations joint integ preA" ID: "Process 46"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations joint integ preA

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "AFROC decision joint integ preA" ID: "Decide 37"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions joint integ preA" ID: "Process 49"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Accomplish Post AFROC actions joint integ preA
Priority:	2
Report Statistics	Yes

Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Air staff process joint integ preA" ID: "Process 41"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module "Check for previous path joint integ preA" ID: "Decide 39"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count
Percent True	50
Row:	1

Type:	If
Value:	1

Module "Critical comments joint integ preA" ID: "Decide 33"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical comments joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity joint integ preA" ID: "Decide 38"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Death at AFROC joint integ preA" ID: "Dispose 11"

Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC joint integ preA
Record Entity Statistics	Yes

Module "Document review phase 2 flag level joint integ preA" ID: "Process 43"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document review phase 2 flag level joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	34

Module "Document review phase joint integ preA" ID: "Decide 35"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Document review phase joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50

Row:	1
Type:	With
Value:	1

Module "Draft document joint integ preA" ID: "Process 40"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End simulation Joint Int preA 1" ID: "Assign 130"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	End simulation Joint Int preA 1

Module "Final AFROC approval joint integ preA" ID: "Decide 41"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Final AFROC approval joint integ preA

Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Final AFROC resolution joint integ preA" ID: "Process 51"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	42
Name:	Final AFROC resolution joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	48

Module "Hold for a year later in process 2nd time joint integ preA" ID: "Process 48"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270

Name:	Hold for a year later in process 2nd time joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process joint integ preA" ID: "Process 47"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Interoperability Certification joint integ preA" ID: "Process 45"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10

Name:	Interoperability Certification joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module "MAJCOM approval joint integ preA" ID: "Decide 34"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval later on joint integ preA" ID: "Decide 36"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval later on joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99

Row:	1
Type:	With
Value:	1

Module "Post AFROC actions joint integ preA" ID: "Decide 40"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint integ preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 19" ID: "Record 19"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 19
Counter Set Name:	Counter Set 1
Name:	Record 19
Record into Set	No
Set Index:	1
Tally Name:	Record 19
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Resolving flag level comments joint integ preA" ID: "Process 44"

Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving flag level comments joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module	"Set tracking joint integ PreA" ID: "Assign 12"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Set tracking joint integ PreA

Module	"comment resolution joint integ preA" ID: "Process 42"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution joint integ preA
Priority:	2
Report Statistics	Yes

Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "document signing and validation joint integ preA" ID: "Process 50"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	14
Name:	document signing and validation joint integ preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	26

Module "Joint Integration PreB" ID: "Process 107"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Integration PreB
Priority:	2
Report Statistics	No

Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Integration PreB

Module "AFROC Preparations joint integ preB" ID: "Process 114"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "AFROC decision joint integ preB" ID: "Decide 89"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision joint integ preB
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions joint integ preB" ID: "Process 117"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Accomplish Post AFROC actions joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Air staff process joint integ preB" ID: "Process 109"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process joint integ preB
Priority:	2

Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module "Check for previous path joint integ preB" ID: "Decide 91"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count PreB
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Critical comments joint integ preB" ID: "Decide 85"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical comments joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With

Value:	1

Module "Dead activity joint integ preB" ID: "Decide 90"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Death at AFROC joint integ preB" ID: "Dispose 19"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC joint integ preB
Record Entity Statistics	Yes

Module "Document review phase 2 flag level joint integ preB" ID: "Process 111"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document review phase 2 flag level joint integ preB

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	34

Module "Document review phase joint integ preB" ID: "Decide 87"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Document review phase joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "Draft document joint integ preB" ID: "Process 108"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document joint integ preB
Priority:	2
Report Statistics	Yes

Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End Simulation PreB 2" ID: "Assign 64"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End Simulation PreB 2

Module "Final AFROC approval joint integ preB" ID: "Decide 93"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Final AFROC approval joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Final AFROC resolution joint integ preB" ID: "Process 119"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60

Minimum:	42
Name:	Final AFROC resolution joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	48

Module "Hold for a year later in process 2nd time joint integ preB" ID: "Process 116"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process 2nd time joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process joint integ preB" ID: "Process 115"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365

Minimum:	270
Name:	Hold for a year later in process joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Interoperability Certification joint integ preB" ID: "Process 113"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Interoperability Certification joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module "MAJCOM approval joint integ preB" ID: "Decide 86"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval joint integ preB
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval later on joint integ preB" ID: "Decide 88"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval later on joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions joint integ preB" ID: "Decide 92"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint integ preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1

Type:	With
Value:	1

Module "Record 22" ID: "Record 22"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 22
Counter Set Name:	Counter Set 1
Name:	Record 22
Record into Set	No
Set Index:	1
Tally Name:	Record 22
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Resolving flag level comments joint integ preB" ID: "Process 112"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving flag level comments joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module	"Set tracking joint integ PreB" ID: "Assign 28"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Set tracking joint integ PreB

Module	"comment resolution joint integ preB" ID: "Process 110"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution joint integ preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module	"document signing and validation joint integ preB" ID: "Process 118"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	14
Name:	document signing and validation joint integ preB
Priority:	2

Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	26

Module "Joint Integration PreC" ID: "Process 201"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Integration PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Integration PreC

Module "AFROC Preparations joint integ preC" ID: "Process 208"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60

Minimum:	30
Name:	AFROC Preparations joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "AFROC decision joint integ preC" ID: "Decide 168"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC decision joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "Accomplish Post AFROC actions joint integ preC" ID: "Process 211"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Accomplish Post AFROC actions joint integ preC

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Air staff process joint integ preC" ID: "Process 203"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Air staff process joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	29

Module "Check for previous path joint integ preC" ID: "Decide 170"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count PreC

Percent True	50
Row:	1
Type:	If
Value:	1

Module "Critical comments joint integ preC" ID: "Decide 164"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical comments joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity joint integ preC" ID: "Decide 169"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Death at AFROC joint integ preC" ID: "Dispose 36"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC joint integ preC
Record Entity Statistics	Yes

Module "Document review phase 2 flag level joint integ preC" ID: "Process 205"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document review phase 2 flag level joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	34

Module "Document review phase joint integ preC" ID: "Decide 166"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Document review phase joint integ preC
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "Draft document joint integ preC" ID: "Process 202"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	Draft document joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "End Simulation PreC 2" ID: "Assign 86"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End Simulation PreC 2

Module "Final AFROC approval joint integ preC" ID: "Decide 172"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type

Is:	>=
Name:	Final AFROC approval joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Final AFROC resolution joint integ preC" ID: "Process 213"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	42
Name:	Final AFROC resolution joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	48

Module "Hold for a year later in process 2nd time joint integ preC" ID: "Process 210"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1

Maximum:	365
Minimum:	270
Name:	Hold for a year later in process 2nd time joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process joint integ preC" ID: "Process 209"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Interoperability Certification joint integ preC" ID: "Process 207"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	20
Minimum:	10
Name:	Interoperability Certification joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module "MAJCOM approval joint integ preC" ID: "Decide 165"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval later on joint integ preC" ID: "Decide 167"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval later on joint integ preC
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions joint integ preC" ID: "Decide 171"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint integ preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 25" ID: "Record 25"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 25
Counter Set Name:	Counter Set 1
Name:	Record 25
Record into Set	No
Set Index:	1
Tally Name:	Record 25
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module	"Resolving flag level comments joint integ preC" ID: "Process 206"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving flag level comments joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	28

Module	"Set tracking joint integ PreC" ID: "Assign 85"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Set tracking joint integ PreC

Module	"Wait for successful Design Readiness Review Interest PreC" ID: "Hold 17"
Type:	Hold
From template:	AdvancedProcess
Module Description:	None
Operands:	

Attribute:	Attribute 1
Condition:	DRR Success==1
Expression:	
Limit:	
Name:	Wait for successful Design Readiness Review Interest PreC
Queue Name:	Wait for successful Design Readiness Review Interest PreC.Queue

Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for successful Design Readiness Review Interest PreC Set.Queue
Type:	Scan
Wait for Value:	1

Module "comment resolution joint integ preC" ID: "Process 204"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	comment resolution joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "document signing and validation joint integ preC" ID: "Process 212"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30

Minimum:	14
Name:	document signing and validation joint integ preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	26

Module "Joint Interest preA" ID: "Process 24"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Interest preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Interest preA

Module "AFROC Decision joint int preA" ID: "Decide 25"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type

Is:	>=
Name:	AFROC Decision joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "AFROC Preparations joint int preA" ID: "Process 29"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations joint int preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "Air Staff processes joint int preA" ID: "Process 26"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	42
Minimum:	21
Name:	Air Staff processes joint int preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Check for previous path joint int preA" ID: "Decide 28"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Comment Resolution joint int preA" ID: "Process 27"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15

Name:	Comment Resolution joint int preA
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Critical Comments? joint int preA" ID: "Decide 23"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical Comments? joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity joint int preA" ID: "Decide 27"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99

Row:	1
Type:	With
Value:	1

Module "Death at AFROC joint int preA" ID: "Dispose 10"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Death at AFROC joint int preA
Record Entity Statistics	Yes

Module "Document Reveiw Phase 2 Flag Level" ID: "Process 31"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document Reveiw Phase 2 Flag Level
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	38

Module "Document Review Phase" ID: "Decide 29"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	Document Review Phase
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "End simulation Joint Interest preA 1" ID: "Assign 131"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End simulation Joint Interest preA 1

Module "Functional Capabilities Board" ID: "Process 34"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Functional Capabilities Board
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "Hold for a year" ID: "Process 28"
Type: Process
From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process" ID: "Process 33"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "JCB issues" ID: "Decide 31"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	JCB issues
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	15
Row:	1
Type:	With
Value:	1

Module "JROC" ID: "Decide 32"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	JROC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "JROC preparations" ID: "Process 37"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular

Expression:	1
Maximum:	30
Minimum:	14
Name:	JROC preparations
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Joint Capabilities Board" ID: "Process 35"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Joint Capabilities Board
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "MAJCOM Approval? joint int preA" ID: "Decide 24"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	MAJCOM Approval? joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval" ID: "Decide 30"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions" ID: "Process 30"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Post AFROC actions

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Post AFROC actions joint int preA" ID: "Decide 26"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint int preA
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 18" ID: "Record 18"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 18
Counter Set Name:	Counter Set 1
Name:	Record 18
Record into Set	No
Set Index:	1
Tally Name:	Record 18
Tally Set Name:	Tally Set 1
Type:	Interval

Value:	1

Module "Resolve JCB issues" ID: "Process 36"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Resolve JCB issues
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module "Resolve JROC issues" ID: "Process 38"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	42
Name:	Resolve JROC issues
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days

Value	51

Module "Resolving Flag level comments" ID: "Process 32"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving Flag level comments
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	27

Module "Set tracking joint int PreA" ID: "Assign 10"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Set tracking joint int PreA

Module "draft document preA joint interest" ID: "Process 25"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30

Name:	draft document preA joint interest
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "Joint Interest preB" ID: "Process 92"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Interest preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Interest preB

Module "AFROC Decision joint int preB" ID: "Decide 77"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	AFROC Decision joint int preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "AFROC Preparations joint int preB" ID: "Process 97"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations joint int preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "Air Staff processes joint int preB" ID: "Process 94"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42

Minimum:	21
Name:	Air Staff processes joint int preB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Check for previous path joint int preB" ID: "Decide 80"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint int preB
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Comment Resolution joint int preB" ID: "Process 95"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	Comment Resolution joint int preB

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Critical Comments? joint int preB" ID: "Decide 75"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical Comments? joint int preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity joint int preB" ID: "Decide 79"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint int preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1

Type:	With
Value:	1

Module "Death at AFROC joint int preB" ID: "Dispose 18"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Death at AFROC joint int preB
Record Entity Statistics	Yes

Module "Document Reveiw Phase 2 Flag Level PreB" ID: "Process 99"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document Reveiw Phase 2 Flag Level PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	38

Module "Document Review Phase PreB" ID: "Decide 81"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Document Review Phase PreB

Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "End Simulation PreB 3" ID: "Assign 65"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	End Simulation PreB 3

Module "Functional Capabilities Board PreB" ID: "Process 102"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Functional Capabilities Board PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "Hold for a year PreB" ID: "Process 96"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process PreB" ID: "Process 101"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "JCB issues PreB" ID: "Decide 83"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	JCB issues PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	15
Row:	1
Type:	With
Value:	1

Module "JROC PreB" ID: "Decide 84"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	JROC PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "JROC preparations PreB" ID: "Process 105"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	30
Minimum:	14
Name:	JROC preparations PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Joint Capabilities Board PreB" ID: "Process 103"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Joint Capabilities Board PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "MAJCOM Approval? joint int preB" ID: "Decide 76"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM Approval? joint int preB

Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval PreB" ID: "Decide 82"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions PreB" ID: "Process 98"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Post AFROC actions PreB
Priority:	2

Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Post AFROC actions joint int preB" ID: "Decide 78"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint int preB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 21" ID: "Record 21"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 21
Counter Set Name:	Counter Set 1
Name:	Record 21
Record into Set	No
Set Index:	1
Tally Name:	Record 21
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module	"Resolve JCB issues PreB" ID: "Process 104"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Resolve JCB issues PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module	"Resolve JROC issues PreB" ID: "Process 106"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	42
Name:	Resolve JROC issues PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	51

Module	"Resolving Flag level comments PreB" ID: "Process 100"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving Flag level comments PreB
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	27

Module	"Set tracking joint int PreB" ID: "Assign 26"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Set tracking joint int PreB

Module	"draft document preB joint interest" ID: "Process 93"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	draft document preB joint interest

Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "Joint Interest preC" ID: "Process 186"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Joint Interest preC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Joint Interest preC

Module "AFROC Decision joint int preC" ID: "Decide 156"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	AFROC Decision joint int preC

Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "AFROC Preparations joint int preC" ID: "Process 191"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	AFROC Preparations joint int preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "Air Staff processes joint int preC" ID: "Process 188"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21

Name:	Air Staff processes joint int preC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Check for previous path joint int preC" ID: "Decide 159"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Check for previous path joint int preC
Named:	Attribute 1
Named:	Entity 1
Named:	AFROC Count PreC
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Comment Resolution joint int preC" ID: "Process 189"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	45
Minimum:	15
Name:	Comment Resolution joint int preC
Priority:	2

Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	30

Module "Critical Comments? joint int preC" ID: "Decide 154"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Critical Comments? joint int preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Dead activity joint int preC" ID: "Decide 158"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Dead activity joint int preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With

Value:	1

Module "Death at AFROC joint int preC" ID: "Dispose 35"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Death at AFROC joint int preC
Record Entity Statistics	Yes

Module "Document Reveiw Phase 2 Flag Level PreC" ID: "Process 193"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	42
Minimum:	21
Name:	Document Reveiw Phase 2 Flag Level PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	38

Module "Document Review Phase PreC" ID: "Decide 160"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Document Review Phase PreC
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module "End Simulation PreC 3" ID: "Assign 83"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	End Simulation PreC 3

Module "Functional Capabilities Board PreC" ID: "Process 196"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Functional Capabilities Board PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "Hold for a year PreC" ID: "Process 190"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D

Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Hold for a year later in process PreC" ID: "Process 195"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	365
Minimum:	270
Name:	Hold for a year later in process PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "JCB issues PreC" ID: "Decide 162"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1

If:	Entity Type
Is:	>=
Name:	JCB issues PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	15
Row:	1
Type:	With
Value:	1

Module "JROC PreC" ID: "Decide 163"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	JROC PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "JROC preparations PreC" ID: "Process 199"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30

Minimum:	14
Name:	JROC preparations PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Joint Capabilities Board PreC" ID: "Process 197"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	21
Minimum:	7
Name:	Joint Capabilities Board PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	14

Module "MAJCOM Approval? joint int preC" ID: "Decide 155"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM Approval? joint int preC
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MAJCOM approval PreC" ID: "Decide 161"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM approval PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Post AFROC actions PreC" ID: "Process 192"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	1
Name:	Post AFROC actions PreC
Priority:	2
Report Statistics	Yes

Std Dev:	.2
Type:	Standard
Units:	Days
Value	11

Module "Post AFROC actions joint int preC" ID: "Decide 157"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Post AFROC actions joint int preC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module "Record 24" ID: "Record 24"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 24
Counter Set Name:	Counter Set 1
Name:	Record 24
Record into Set	No
Set Index:	1
Tally Name:	Record 24
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module	"Resolve JCB issues PreC" ID: "Process 198"
Type:	Process
From template:	BasicProcess
Module Description:	None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	20
Minimum:	10
Name:	Resolve JCB issues PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	15

Module	"Resolve JROC issues PreC" ID: "Process 200"
Type:	Process
From template:	BasicProcess
Module Description:	None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	42
Name:	Resolve JROC issues PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	51

Module "Resolving Flag level comments PreC" ID: "Process 194"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	15
Name:	Resolving Flag level comments PreC
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	27

Module "Set tracking joint int PreC" ID: "Assign 82"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Set tracking joint int PreC

Module "Wait for successful Design Readiness Review Joint PreC" ID: "Hold 18"
Type: Hold
From template: AdvancedProcess
Module Description: None
Operands:

Attribute:	Attribute 1
Condition:	DRR Success==1
Expression:	
Limit:	
Name:	Wait for successful Design Readiness Review Joint PreC
Queue Name:	Wait for successful Design Readiness Review Joint PreC.Queue
Queue Type:	Queue

Queue Type:	Queue
Set Index:	1
Set Name:	Wait for successful Design Readiness Review Joint PreC Set.Queue
Type:	Scan
Wait for Value:	1

Module "draft document preC joint interest" ID: "Process 187"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	30
Name:	draft document preC joint interest
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	55

Module "KPP Development" ID: "Process 79"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(0.65*TD original contract length, .72*TD original contract length, 0.75*TD original contract length)
Maximum:	1.5

Minimum:	.5
Name:	KPP Development
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "KPPs arrive from Requirements" ID: "Hold 3"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	KPPs Ready PreB==1
Expression:	
Limit:	
Name:	KPPs arrive from Requirements
Queue Name:	KPPs arrive from Requirements.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	KPPs arrive from Requirements Set.Queue
Type:	Scan
Wait for Value:	4

Module "KPPs arrive from Requirements PreC" ID: "Hold 12"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	KPPs Ready PreC==1
Expression:	
Limit:	
Name:	KPPs arrive from Requirements PreC

Queue Name:	KPPs arrive from Requirements PreC.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	KPPs arrive from Requirements PreC Set.Queue
Type:	Scan
Wait for Value:	4

Module "Kill at MS A decision" ID: "Dispose 15"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Kill at MS A decision
Record Entity Statistics	No

Module "Kill at MS B decision" ID: "Dispose 23"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Kill at MS B decision
Record Entity Statistics	No

Module "Kill at MS C decision" ID: "Dispose 38"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Kill at MS C decision
Record Entity Statistics	No

Module "Kill by MDA at Concept Decision" ID: "Dispose 14"
Type: Dispose
From template: BasicProcess
Module Description: None
Operands:

Name:	Kill by MDA at Concept Decision
Record Entity Statistics	No

Module	"Kill program at selected COA" ID: "Assign 16"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	

Name:	Kill program at selected COA

Module	"Logic check for ACAT level PreB" ID: "Decide 134"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Variable
Is:	==
Name:	Logic check for ACAT level PreB
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module	"MAJCOM A Letters Coordinate and Concur" ID: "Decide 9"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM A Letters Coordinate and Concur
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	80
Row:	1
Type:	With

Value:	1

Module "MAJCOM A Letters Coordinate and Concur PreB" ID: "Decide 66"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM A Letters Coordinate and Concur PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "MAJCOM A Letters Coordinate and Concur PreC" ID: "Decide 148"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MAJCOM A Letters Coordinate and Concur PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "MDA Milestone approval" ID: "Decide 61"
Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MDA Milestone approval
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MDA Milestone approval PreB" ID: "Decide 112"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MDA Milestone approval PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "MDA Milestone approval PreC" ID: "Decide 182"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type

Is:	>=
Name:	MDA Milestone approval PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "MDAP Threshold crossed?" ID: "Decide 6"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	MDAP Threshold crossed?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	10
Row:	1
Type:	With
Value:	1

Module "MS A decision" ID: "Assign 22"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	MS A decision

Module "MS B decision" ID: "Assign 38"
Type: Assign
From template: BasicProcess
Module Description: None

Operands:	Name: MS B decision

Module	"MS C decision" ID: "Assign 90"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: MS C decision

Module	"Make Trades?" ID: "Decide 221"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Make Trades?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With
Value:	1

Module	"Non AoA Route" ID: "Separate 28"
Type:	Separate
From template:	BasicProcess
Module Description:	None
Operands:	

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Non AoA Route
Percent Cost to Duplicates	0
Type:	Duplicate

Module	"Notify PreC Baseline" ID: "Assign 128"
Type:	Assign

From template:	BasicProcess
Module Description:	None
Operands:	Name: Notify PreC Baseline

Module	"Notify Requirements about DRR success" ID: "Assign 124"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Notify Requirements about DRR success

Module	"OR junction" ID: "Decide 4"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	OR junction
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	75
Row:	1
Type:	With
Value:	1

Module	"Obtain funds in a timely manner PreB" ID: "Decide 123"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Obtain funds in a timely manner PreB
Named:	Attribute 1
Named:	Entity 1

Named:	Variable 1
Percent True	65
Row:	1
Type:	With
Value:	1

Module "Obtain funds in a timely manner PreC" ID: "Decide 191"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Obtain funds in a timely manner PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	65
Row:	1
Type:	With
Value:	1

Module "PDR 2" ID: "Decide 212"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	PDR 2
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	With

Value:	1

Module "PDR 3" ID: "Decide 213"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	PDR 3
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	90
Row:	1
Type:	With
Value:	1

Module "PDR Rework PreC" ID: "Process 254"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	PDR rework
Maximum:	1.5
Minimum:	.5
Name:	PDR Rework PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "PDR delay 2 PreC" ID: "Process 255"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	PDR Rework
Maximum:	1.5
Minimum:	.5
Name:	PDR delay 2 PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "PDR delay 3 PreC" ID: "Process 256"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	PDR Rework
Maximum:	1.5
Minimum:	.5
Name:	PDR delay 3 PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module	"PDR success??" ID: "Decide 211"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	PDR success??
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	25
Row:	1
Type:	With
Value:	1

Module	"PEM or other staff find money PreB" ID: "Process 177"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	(ACAT level==1)*TRIA(14,83,180)+(ACAT level==2)*TRIA(14,160,180)+(ACAT level==3)*TRIA(14,160,180)
Maximum:	1.5
Minimum:	.5
Name:	PEM or other staff find money PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module	"PEM or other staff find money PreC" ID: "Process 251"
Type:	Process
From template:	BasicProcess
Module Description:	None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	(ACAT level==1)*TRIA(14,83,180)+(ACAT level==2)*TRIA(14,160,180)+(ACAT level==3)*TRIA(14,160,180)
Maximum:	1.5
Minimum:	.5
Name:	PEM or other staff find money PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module	"Path depends upon ACAT level PreB" ID: "Decide 116"
Type:	Decide
From template:	BasicProcess
Module Description:	None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Path depends upon ACAT level PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf
Value:	1

Module	"Path depends upon ACAT level PreC" ID: "Decide 186"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Path depends upon ACAT level PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NIf
Value:	1

Module	"Pre DRR Acquisition Panels" ID: "Process 261"
Type:	Process
From template:	BasicProcess
Module Description:	None
Operands:	

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	3
Name:	Pre DRR Acquisition Panels
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	12

Module	"PreRSR MAJCOM A8" ID: "Decide 11"
Type:	Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	PreRSR MAJCOM A8
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "PreRSR MAJCOM A8 PreB" ID: "Decide 69"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	PreRSR MAJCOM A8 PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "PreRSR MAJCOM A8 PreC" ID: "Decide 149"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type

Is:	>=
Name:	PreRSR MAJCOM A8 PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	99
Row:	1
Type:	With
Value:	1

Module "Preferred System Concept Named" ID: "Assign 20"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Preferred System Concept Named

Module "Preliminary Design Review" ID: "Decide 196"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Expression
Is:	==
Name:	Preliminary Design Review
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE.((SDD contract length * .25) + SDD Contract Start)

Module "Preparation for Acqiusition Panels before DRR" ID: "Process 260"
Type: Process
From template: BasicProcess
Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	60
Minimum:	25
Name:	Preparation for Acqiusition Panels before DRR
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	50

Module "Prepare Concept of Operation" ID: "Process 178"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	TRIA(0.6*SDD original contract length, 0.7*SDD original contract length, 0.8*SDD original contract length)
Maximum:	1.5
Minimum:	.5
Name:	Prepare Concept of Operation
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Prepare Courses of Action PreB" ID: "Process 149"

Type: Process

From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	10
Minimum:	5
Name:	Prepare Courses of Action PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	8

Module "Prepare Courses of Action PreC" ID: "Process 232"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	10
Minimum:	5
Name:	Prepare Courses of Action PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	8

Module "Prepare for Acquisition" ID: "Process 3"
Type: Process

From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1460
Minimum:	5
Name:	Prepare for Acquisition
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	7

Module "Processes come together" ID: "Batch 3"
Type: Batch
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Processes come together
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Processes come together PreB" ID: "Batch 7"
Type: Batch
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Processes come together PreB
Representative Entity Type:	

Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Processes come together PreC" ID: "Batch 15"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Processes come together PreC
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Program Kill at CDR" ID: "Dispose 48"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Program Kill at CDR
Record Entity Statistics	No

Module "Program Kill at PDR" ID: "Dispose 47"

Type: Dispose

From template: BasicProcess

Module Description: None

Operands:

Name:	Program Kill at PDR
Record Entity Statistics	No

Module "Program Office Cost Estimate PreB" ID: "Process 172"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA

Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	60
Name:	Program Office Cost Estimate PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	65

Module "Program Office Cost Estimate PreC" ID: "Process 246"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	90
Minimum:	60
Name:	Program Office Cost Estimate PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	65

Module "Program Review OK" ID: "Decide 117"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable

Is:	>=
Name:	Program Review OK
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Program Review OK PreC" ID: "Decide 187"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	>=
Name:	Program Review OK PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	95
Row:	1
Type:	With
Value:	1

Module "Program review condition" ID: "Create 4"

Type: Create

From template: BasicProcess

Module Description: None

Operands:

Entities per Arrival:	1
Entity Type:	ProgramreviewpreB
Expression:	(ACAT level==1) *TRIA(90 , 105 , 120) + (ACAT level ==2) * TRIA(160,180,200)+ (ACAT level ==3) * TRIA(160,180,200)
First Creation:	0.00

Max Arrivals:	Infinite
Name:	Program review condition
Schedule Name:	Schedule 1
Type:	Expression
Units:	Days
Value:	1

Module "Program review condition PreC" ID: "Create 6"

Type: Create

From template: BasicProcess

Module Description: None

Operands:

Entities per Arrival:	1
Entity Type:	ProgramreviewpreC
Expression:	(ACAT level==1) *TRIA(90 , 105 , 120) + (ACAT level ==2) * TRIA(160,180,200)+ (ACAT level ==3) * TRIA(160,180,200)
First Creation:	0
Max Arrivals:	Infinite
Name:	Program review condition PreC
Schedule Name:	Schedule 1
Type:	Expression
Units:	Days
Value:	1

Module "Protest award PreB" ID: "Decide 114"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Protest award PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1

Percent True	20
Row:	1
Type:	With
Value:	1

Module "Protest award PreC" ID: "Decide 184"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Protest award PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	20
Row:	1
Type:	With
Value:	1

Module "Protest upheld" ID: "Decide 115"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Protest upheld
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	40
Row:	1
Type:	With
Value:	1

Module	"Protest upheld PreC" ID: "Decide 185"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Entity Type
Is:	>=
Name:	Protest upheld PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	40
Row:	1
Type:	With
Value:	1

Module	"Query contract elapsed time 6 months to completion PreB" ID: "Decide 136"
Type:	Decide
From template:	BasicProcess
Module Description:	None
Operands:	

Column:	1
If:	Expression
Is:	<=
Name:	Query contract elapsed time 6 months to completion PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE. (TD Contract End Date-180) || TD Contract End Date Near

Module	"Query contract elapsed time 6 months to completion PreC" ID: "Decide 198"
Type:	Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Expression
Is:	<=
Name:	Query contract elapsed time 6 months to completion PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Technology Development Contract length
Percent True	50
Row:	1
Type:	If
Value:	TNOW.GE.(SDD Contract End Date-180) || SDD Contract condition end is close

---

Module "RFP Coordination Process" ID: "Process 74"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	50
Minimum:	25
Name:	RFP Coordination Process
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "RFP Coordination Process PreB" ID: "Process 141"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	50
Minimum:	25
Name:	RFP Coordination Process PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "RFP Coordination Process PreC" ID: "Process 224"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	50
Minimum:	25
Name:	RFP Coordination Process PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	45

Module "RFP Release and Source Selection PreB" ID: "Process 146"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	90
Name:	RFP Release and Source Selection PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "RFP Release and Source Selection PreC" ID: "Process 229"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	90
Name:	RFP Release and Source Selection PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "RSR HQ USAF A5R" ID: "Decide 12"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	RSR HQ USAF A5R
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "RSR HQ USAF A5R PreB" ID: "Decide 70"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	RSR HQ USAF A5R PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "RSR HQ USAF A5R PreC" ID: "Decide 150"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	RSR HQ USAF A5R PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	98
Row:	1
Type:	With
Value:	1

Module "Random Entry Point" ID: "Process 1"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	Other
Delay Type:	Uniform
Expression:	TRIA(Min , Mode , Max)
Maximum:	365
Minimum:	1
Name:	Random Entry Point
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Receipt of approved CCD" ID: "Batch 14"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Receipt of approved CCD
Representative Entity Type:	
Rule:	Any Entity

Save Criterion:	Last
Type:	Permanent

Module "Receipt of approved CPD" ID: "Batch 19"
Type: Batch
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Receipt of approved CPD
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Record 1" ID: "Record 1"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 1
Counter Set Name:	Counter Set 1
Name:	Record 1
Record into Set	No
Set Index:	1
Tally Name:	Record 1
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 10" ID: "Record 10"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 10

Counter Set Name:	Counter Set 1
Name:	Record 10
Record into Set	No
Set Index:	1
Tally Name:	Record 10
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 11" ID: "Record 11"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 11
Counter Set Name:	Counter Set 1
Name:	Record 11
Record into Set	No
Set Index:	1
Tally Name:	Record 11
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 12" ID: "Record 12"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 12
Counter Set Name:	Counter Set 1
Name:	Record 12
Record into Set	No
Set Index:	1
Tally Name:	Record 12
Tally Set Name:	Tally Set 1

Type:	Interval
Value:	1

Module "Record 13" ID: "Record 13"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 13
Counter Set Name:	Counter Set 1
Name:	Record 13
Record into Set	No
Set Index:	1
Tally Name:	Record 13
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 14" ID: "Record 14"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 14
Counter Set Name:	Counter Set 1
Name:	Record 14
Record into Set	No
Set Index:	1
Tally Name:	Record 14
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 15" ID: "Record 15"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 15
Counter Set Name:	Counter Set 1
Name:	Record 15
Record into Set	No
Set Index:	1
Tally Name:	Record 15
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 16" ID: "Record 16"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 16
Counter Set Name:	Counter Set 1
Name:	Record 16
Record into Set	No
Set Index:	1
Tally Name:	Record 16
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 17" ID: "Record 17"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 17
Counter Set Name:	Counter Set 1
Name:	Record 17
Record into Set	No

Set Index:	1
Tally Name:	Record 17
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 2" ID: "Record 2"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 2
Counter Set Name:	Counter Set 1
Name:	Record 2
Record into Set	No
Set Index:	1
Tally Name:	Record 2
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 3" ID: "Record 3"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 3
Counter Set Name:	Counter Set 1
Name:	Record 3
Record into Set	No
Set Index:	1
Tally Name:	Record 3
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 33" ID: "Record 33"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 33
Counter Set Name:	Counter Set 1
Name:	Record 33
Record into Set	No
Set Index:	1
Tally Name:	Record 33
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 34" ID: "Record 34"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 34
Counter Set Name:	Counter Set 1
Name:	Record 34
Record into Set	No
Set Index:	1
Tally Name:	Record 34
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 35" ID: "Record 35"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 35

Counter Set Name:	Counter Set 1
Name:	Record 35
Record into Set	No
Set Index:	1
Tally Name:	Record 35
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 36" ID: "Record 36"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 36
Counter Set Name:	Counter Set 1
Name:	Record 36
Record into Set	No
Set Index:	1
Tally Name:	Record 36
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 37" ID: "Record 37"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 37
Counter Set Name:	Counter Set 1
Name:	Record 37
Record into Set	No
Set Index:	1
Tally Name:	Record 37
Tally Set Name:	Tally Set 1

Type:	Interval
Value:	1

Module "Record 38" ID: "Record 38"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 38
Counter Set Name:	Counter Set 1
Name:	Record 38
Record into Set	No
Set Index:	1
Tally Name:	Record 38
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 39" ID: "Record 39"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 39
Counter Set Name:	Counter Set 1
Name:	Record 39
Record into Set	No
Set Index:	1
Tally Name:	Record 39
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 4" ID: "Record 4"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 4
Counter Set Name:	Counter Set 1
Name:	Record 4
Record into Set	No
Set Index:	1
Tally Name:	Record 4
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 40" ID: "Record 40"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 40
Counter Set Name:	Counter Set 1
Name:	Record 40
Record into Set	No
Set Index:	1
Tally Name:	Record 40
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 41" ID: "Record 41"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 41
Counter Set Name:	Counter Set 1
Name:	Record 41
Record into Set	No

Set Index:	1
Tally Name:	Record 41
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 5" ID: "Record 5"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 5
Counter Set Name:	Counter Set 1
Name:	Record 5
Record into Set	No
Set Index:	1
Tally Name:	Record 5
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 6" ID: "Record 6"

Type: Record

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	SimTime
Counter Name:	Record 6
Counter Set Name:	Counter Set 1
Name:	Record 6
Record into Set	No
Set Index:	1
Tally Name:	Record 6
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 7" ID: "Record 7"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 7
Counter Set Name:	Counter Set 1
Name:	Record 7
Record into Set	No
Set Index:	1
Tally Name:	Record 7
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 8" ID: "Record 8"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 8
Counter Set Name:	Counter Set 1
Name:	Record 8
Record into Set	No
Set Index:	1
Tally Name:	Record 8
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record 9" ID: "Record 9"
Type: Record
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	SimTime
Counter Name:	Record 9

Counter Set Name:	Counter Set 1
Name:	Record 9
Record into Set	No
Set Index:	1
Tally Name:	Record 9
Tally Set Name:	Tally Set 1
Type:	Interval
Value:	1

Module "Record CCD" ID: "Assign 27"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Record CCD

Module "Record CPD" ID: "Assign 84"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Record CPD

Module "Record ICD time" ID: "Assign 11"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Record ICD time

Module "Reinsert into Acquisition Process A" ID: "Assign 132"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Reinsert into Acquisition Process A

Module "Reinsert into Acquisition Process B" ID: "Assign 134"
Type: Assign
From template: BasicProcess
Module Description: None

Operands:

Name:	Reinsert into Acquisition Process B

Module "Reinsert into Acquisition Process C" ID: "Assign 133"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Reinsert into Acquisition Process C

Module "Rejection outright" ID: "Decide 3"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Rejection outright
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	55
Row:	1
Type:	With
Value:	1

Module "Release KPPs to Acquisition PreC" ID: "Assign 127"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Release KPPs to Acquisition PreC

Module "Request for Funds between August and December" ID: "Decide 10"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type

Is:	>=
Name:	Request for Funds between August and December
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "Requires AoA not ICD" ID: "Assign 138"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Requires AoA not ICD

Module "Route to Advanced Concepts" ID: "Process 10"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	Tran
Delay Type:	Triangular
Expression:	1
Maximum:	12
Minimum:	3
Name:	Route to Advanced Concepts
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	7.5

Module "Route to Proper Organization" ID: "Process 2"
Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	Tran
Delay Type:	Triangular
Expression:	1
Maximum:	7
Minimum:	3
Name:	Route to Proper Organization
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	3

Module "SRR rework and delay" ID: "Process 171"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	180
Minimum:	60
Name:	SRR rework and delay
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "SVR rework and delay" ID: "Process 245"

Type: Process

From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	SVR rework
Maximum:	180
Minimum:	30
Name:	SVR rework and delay
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	160

Module "Scope Growth Technical Problems PreB" ID: "Decide 132"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Scope Growth Technical Problems PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	20
Row:	1
Type:	With
Value:	1

Module "Scope Growth Technical Problems PreC" ID: "Decide 194"
Type: Decide
From template: BasicProcess
Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Scope Growth Technical Problems PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	20
Row:	1
Type:	With
Value:	1

Module "Scope and Award System Design and Development Contracts" ID: "Process 230"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	120
Minimum:	30
Name:	Scope and Award System Design and Development Contracts
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	100

Module "Scope and Award Technology Development Contracts" ID: "Process 147"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	120
Minimum:	30
Name:	Scope and Award Technology Development Contracts
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	100

Module "Second split into costing activities PreB" ID: "Separate 17"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Second split into costing activities PreB
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Second split into costing activities PreC" ID: "Separate 25"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Second split into costing activities PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Seek funds PreB" ID: "Decide 122"
Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Seek funds PreB
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	30
Row:	1
Type:	With
Value:	1

Module "Seek funds PreC" ID: "Decide 190"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Seek funds PreC
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	30
Row:	1
Type:	With
Value:	1

Module "Separate activities once preA" ID: "Separate 4"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values

Name:	Separate activities once preA
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Separate activities once preB" ID: "Separate 9"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Separate activities once preB
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Separate activities once preC" ID: "Separate 21"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Separate activities once preC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Separate again preA" ID: "Separate 5"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Separate again preA
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Separate for logic testing PreB" ID: "Separate 12"
Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Separate for logic testing PreB
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Separate for logic testing PreC" ID: "Separate 23"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Separate for logic testing PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Set ACAT level" ID: "Process 17"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1.5
Minimum:	.5
Name:	Set ACAT level
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Hours
Value	1

Submodel for Module Set ACAT level

Module	"ACAT IAC" ID: "Assign 6"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT IAC

Module	"ACAT IAM" ID: "Assign 7"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT IAM

Module	"ACAT IC" ID: "Assign 8"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT IC

Module	"ACAT ID" ID: "Assign 9"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT ID

Module	"ACAT II" ID: "Assign 5"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT II

Module	"ACAT III" ID: "Assign 4"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: ACAT III

Module	"Determine ACAT level 1" ID: "Decide 17"
Type:	Decide
From template:	BasicProcess
Module Description:	None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Determine ACAT level 1
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NWith
Value:	1

Module	"Set Acquisition Program Baseline PreB" ID: "Process 176"
Type:	Process
From template:	BasicProcess
Module Description:	None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	10
Name:	Set Acquisition Program Baseline PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module	"Set Acquisition Program Baseline PreC" ID: "Process 250"

Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	30
Minimum:	10
Name:	Set Acquisition Program Baseline PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	25

Module "Set AoA Flag" ID: "Assign 14"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Set AoA Flag

Module "Set AoA kill flag" ID: "Assign 15"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Set AoA kill flag

Module "Set Contract Start variable" ID: "Assign 70"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	Set Contract Start variable

Module "Set Contract Start variable PreC" ID: "Assign 105"

Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set Contract Start variable PreC

Module	"Set Contractor loop variable preC" ID: "Assign 98"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set Contractor loop variable preC

Module	"Set SVR delay cost and schedule penalties" ID: "Assign 125"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set SVR delay cost and schedule penalties

Module	"Set SVR rework" ID: "Assign 126"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set SVR rework

Module	"Set check on decision variable" ID: "Assign 24"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set check on decision variable

Module	"Set check on decision variable PreC" ID: "Assign 80"
Type:	Assign
From template:	BasicProcess
Module Description:	None
Operands:	Name: Set check on decision variable PreC

Module	"Set cost and schedule penalties" ID: "Assign 42"
Type:	Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set cost and schedule penalties

Module "Set cost and schedule penalties PreC" ID: "Assign 94"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set cost and schedule penalties PreC

Module "Set path counter" ID: "Assign 17"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Set path counter

Module "Source selection plans preA" ID: "Process 75"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	65
Minimum:	30
Name:	Source selection plans preA
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	60

Module "Source selection plans preB" ID: "Process 142"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	65
Minimum:	30
Name:	Source selection plans preB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	60

Module "Source selection plans preC" ID: "Process 225"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	65
Minimum:	30
Name:	Source selection plans preC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	60

Module "Split flow PreB" ID: "Separate 11"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split flow PreB
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split flow PreC" ID: "Separate 22"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split flow PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split flow for PreMS C" ID: "Separate 20"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split flow for PreMS C
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split flow for PreMSB" ID: "Separate 6"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split flow for PreMSB
Percent Cost to Duplicates	0

Type:	Duplicate

Module "Split into Acq Planning and Costing Activities" ID: "Separate 19"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split into Acq Planning and Costing Activities
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split into Acq Planning and Costing Activities PreC" ID: "Separate 27"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split into Acq Planning and Costing Activities PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split into costing activities PreB" ID: "Separate 16"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split into costing activities PreB
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Split into costing activities PreC" ID: "Separate 24"
Type: Separate
From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	Split into costing activities PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Start model" ID: "Create 1"

Type: Create

From template: BasicProcess

Module Description: None

Operands:

Entities per Arrival:	1
Entity Type:	Idea
Expression:	UNIF(Min , Max)
First Creation:	0
Max Arrivals:	1
Name:	Start model
Schedule Name:	Schedule 1
Type:	Random
Units:	Days
Value:	1

Module "Start time check" ID: "Assign 19"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	Start time check

Module "Study for ICD Development" ID: "Process 13"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1

Maximum:	360
Minimum:	180
Name:	Study for ICD Development
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Submodel
Units:	Days
Value	300

Submodel for Module Study for ICD Development

Module "Determine path" ID: "Decide 20"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	Determine path
Named:	Attribute 1
Named:	Entity 1
Named:	ACAT Level
Percent True	50
Row:	1
Type:	If
Value:	1

Module "Longer Study" ID: "Process 20"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular

Expression:	1
Maximum:	360
Minimum:	180
Name:	Longer Study
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	300

Module "Short study" ID: "Process 21"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	7
Minimum:	1
Name:	Short study
Priority:	2
Report Statistics	Yes
Std Dev:	.2
Type:	Standard
Units:	Days
Value	5

Module "System Performance Specification delivery" ID: "Assign 54"

Type: Assign

From template: BasicProcess

Module Description: None

Operands:

Name:	System Performance Specification delivery

Module "System Requirements Review" ID: "Decide 143"

Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	System Requirements Review
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	35
Row:	1
Type:	With
Value:	1

Module "System Verification Review" ID: "Decide 204"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	System Verification Review
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	85
Row:	1
Type:	With
Value:	1

Module "TRR Delay PreC" ID: "Process 266"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D

Allocation:	VA
Delay Type:	Expression
Expression:	TRR Delay
Maximum:	1.5
Minimum:	.5
Name:	TRR Delay PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Test Readiness Review" ID: "Decide 220"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Test Readiness Review
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "Timing of funds OK?" ID: "Decide 207"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Entity Type
Is:	>=

Name:	Timing of funds OK?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	55
Row:	1
Type:	With
Value:	1

Module "Trades Delay PreC" ID: "Process 268"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Expression
Expression:	Trades Delay
Maximum:	1.5
Minimum:	.5
Name:	Trades Delay PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	1

Module "Trades Needed" ID: "Decide 140"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Trades Needed
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	70
Row:	1
Type:	With
Value:	1

Module "Trigger Acquisition swimlane activity" ID: "Separate 2"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	All
Name:	Trigger Acquisition swimlane activity
Percent Cost to Duplicates	0
Type:	Duplicate

Module "Trigger CDR once" ID: "Decide 210"
Type: Decide
From template: BasicProcess
Module Description: None
Operands:

Column:	1
If:	Variable
Is:	==
Name:	Trigger CDR once
Named:	Attribute 1
Named:	Entity 1
Named:	CDR
Percent True	50
Row:	1
Type:	If
Value:	0

Module "Trigger PDR once" ID: "Decide 208"
Type: Decide
From template: BasicProcess

Module Description:	None
Operands:	

Column:	1
If:	Variable
Is:	==
Name:	Trigger PDR once
Named:	Attribute 1
Named:	Entity 1
Named:	PDR
Percent True	50
Row:	1
Type:	If
Value:	0

Module	"Uncertainty generator for Event Happens PreB" ID: "Create 5"
Type:	Create
From template:	BasicProcess
Module Description:	None
Operands:	

Entities per Arrival:	1
Entity Type:	Event Happens
Expression:	TRIA(30 , 60 , 90)
First Creation:	0
Max Arrivals:	Infinite
Name:	Uncertainty generator for Event Happens PreB
Schedule Name:	Schedule 1
Type:	Expression
Units:	Days
Value:	1

Module	"Uncertainty generator for Event Happens PreC" ID: "Create 7"
Type:	Create
From template:	BasicProcess
Module Description:	None
Operands:	

Entities per Arrival:	1
Entity Type:	Event Happens 2
Expression:	TRIA(30 , 60 , 90)
First Creation:	0

Max Arrivals:	Infinite
Name:	Uncertainty generator for Event Happens PreC
Schedule Name:	Schedule 1
Type:	Expression
Units:	Days
Value:	1

Module "Update Briefing Materials" ID: "Process 16"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Update Briefing Materials
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Update Briefing Materials PreB" ID: "Process 89"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Update Briefing Materials PreB

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Update Briefing Materials PreC" ID: "Process 183"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	40
Minimum:	10
Name:	Update Briefing Materials PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	35

Module "Update and Schedule Calendar" ID: "Process 14"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	3
Name:	Update and Schedule Calendar

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	12

Module "Update and Schedule Calendar PreB" ID: "Process 87"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	3
Name:	Update and Schedule Calendar PreB
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	12

Module "Update and Schedule Calendar PreC" ID: "Process 181"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	15
Minimum:	3
Name:	Update and Schedule Calendar PreC

Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	12

Module "Wait for AoA Start" ID: "Hold 21"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	Start AoA flag == 1
Expression:	
Limit:	
Name:	Wait for AoA Start
Queue Name:	Wait for AoA Start.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for AoA Start Set.Queue
Type:	Scan
Wait for Value:	1

Module "Wait for Baseline set PreC" ID: "Hold 20"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	PreC Baseline==1
Expression:	
Limit:	
Name:	Wait for Baseline set PreC
Queue Name:	Wait for Baseline set PreC.Queue
Queue Type:	Queue
Queue Type:	Queue

Set Index:	1
Set Name:	Wait for Baseline set PreC Set.Queue
Type:	Scan
Wait for Value:	1

Module "Wait for CDR" ID: "Hold 19"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	CDR==1
Expression:	
Limit:	
Name:	Wait for CDR
Queue Name:	Wait for CDR.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for CDR Set.Queue
Type:	Scan
Wait for Value:	1

Module "Wait for EOA completion" ID: "Hold 2"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	EOA Success==1
Expression:	
Limit:	
Name:	Wait for EOA completion
Queue Name:	Wait for EOA completion.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for EOA completion Set.Queue

Type:	Scan
Wait for Value:	3

Module "Wait for PDR" ID: "Hold 13"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	PDR==1
Expression:	
Limit:	
Name:	Wait for PDR
Queue Name:	Wait for PDR.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for PDR Set.Queue
Type:	Scan
Wait for Value:	10

Module "Wait for RFP Coord Process to end" ID: "Batch 20"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Wait for RFP Coord Process to end
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Wait for Signal from Acquisition" ID: "Hold 1"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	contract start==1
Expression:	
Limit:	
Name:	Wait for Signal from Acquisition
Queue Name:	Wait for Signal from Acquisition.Queue
Queue Type:	Queue
Queue Type:	Internal
Set Index:	1
Set Name:	Wait for Signal from Acquisition Set.Queue
Type:	Scan
Wait for Value:	1

Module "Wait for Signal from Acquisition PreC" ID: "Hold 9"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	contract start PreC==1
Expression:	
Limit:	
Name:	Wait for Signal from Acquisition PreC
Queue Name:	Wait for Signal from Acquisition PreC.Queue
Queue Type:	Queue
Queue Type:	Internal
Set Index:	1
Set Name:	Wait for Signal from Acquisition PreC Set.Queue
Type:	Scan
Wait for Value:	1

Module "Wait for T and E Start" ID: "Hold 5"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	T and E Start PreB==1 && KPP Development signal PreB == 1

Expression:	
Limit:	
Name:	Wait for T and E Start
Queue Name:	Wait for T and E Start.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for T and E Start Set.Queue
Type:	Scan
Wait for Value:	10

Module "Wait for a year" ID: "Process 59"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	270
Minimum:	180
Name:	Wait for a year
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	250

Module "Wait for more favorable conditions" ID: "Process 80"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular

Expression:	1
Maximum:	150
Minimum:	100
Name:	Wait for more favorable conditions
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	115

Module "Wait for more favorable conditions PreC" ID: "Process 179"

Type: Process

From template: BasicProcess

Module Description: None

Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	150
Minimum:	100
Name:	Wait for more favorable conditions PreC
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	115

Module "Wait for signal for Costing and Acquisition Planning activities PreB" ID: "Hold 8"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	Acq Plan PreB==1

Expression:	
Limit:	
Name:	Wait for signal for Costing and Acquisition Planning activities PreB
Queue Name:	Wait for signal for Costing and Acquisition Planning activities PreB.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for signal for Costing and Acquisition Planning activities PreB Set.Queue
Type:	Scan
Wait for Value:	30

Module "Wait for signal for Costing and Acquisition Planning activities PreC" ID: "Hold 15"

Type: Hold

From template: AdvancedProcess

Module Description: None

Operands:

Attribute:	Attribute 1
Condition:	Acq Plan PreC==1
Expression:	
Limit:	
Name:	Wait for signal for Costing and Acquisition Planning activities PreC
Queue Name:	Wait for signal for Costing and Acquisition Planning activities PreC.Queue
Queue Type:	Queue
Queue Type:	Queue
Set Index:	1
Set Name:	Wait for signal for Costing and Acquisition Planning activities PreC Set.Queue
Type:	Scan
Wait for Value:	30

Module "Wait until both complete preA" ID: "Batch 2"

Type: Batch
From template: BasicProcess
Module Description: None
Operands:

Attribute Name:	Attribute 1
Batch Size:	2
Name:	Wait until both complete preA
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "Wait until next year" ID: "Process 12"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	NVA
Delay Type:	Triangular
Expression:	1
Maximum:	270
Minimum:	180
Name:	Wait until next year
Priority:	2
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	250

Module "Waiting Period" ID: "Process 9"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular

Expression:	1
Maximum:	180
Minimum:	14
Name:	Waiting Period
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	118

Module "Which Milestone after MDAP threshold?" ID: "Decide 7"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Which Milestone after MDAP threshold?
Named:	Attribute 1
Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NWith
Value:	1

Module "Which Milestone?" ID: "Decide 5"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Entity Type
Is:	>=
Name:	Which Milestone?
Named:	Attribute 1

Named:	Entity 1
Named:	Variable 1
Percent True	50
Row:	1
Type:	NWith
Value:	1

Module "contractor loop PreB" ID: "Decide 137"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	contractor loop PreB
Named:	Attribute 1
Named:	Entity 1
Named:	contractor loop
Percent True	50
Row:	1
Type:	If
Value:	0

Module "contractor loop check PreC" ID: "Decide 199"

Type: Decide

From template: BasicProcess

Module Description: None

Operands:

Column:	1
If:	Variable
Is:	==
Name:	contractor loop check PreC
Named:	Attribute 1
Named:	Entity 1
Named:	contractor loop PreC
Percent True	50
Row:	1

Type:	If
Value:	0

Module "determine good funding quality preB" ID: "Assign 43"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	determine good funding quality preB

Module "determine good funding quality preC" ID: "Assign 95"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	determine good funding quality preC

Module "determine poor funding quality preB" ID: "Assign 44"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	determine poor funding quality preB

Module "determine poor funding quality preC" ID: "Assign 96"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	determine poor funding quality preC

Module "end simulation PreB" ID: "Assign 23"
Type: Assign
From template: BasicProcess
Module Description: None
Operands:

Name:	end simulation PreB

Module "end simulation PreC" ID: "Assign 79"
Type: Assign
From template: BasicProcess
Module Description: None

Operands:

Name:	end simulation PreC

Module "for Affordability Assessment PreB" ID: "Batch 13"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	3
Name:	for Affordability Assessment PreB
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "for Affordability Assessment PreC" ID: "Batch 18"

Type: Batch

From template: BasicProcess

Module Description: None

Operands:

Attribute Name:	Attribute 1
Batch Size:	3
Name:	for Affordability Assessment PreC
Representative Entity Type:	
Rule:	Any Entity
Save Criterion:	Last
Type:	Permanent

Module "for funding check" ID: "Separate 18"

Type: Separate

From template: BasicProcess

Module Description: None

Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	for funding check
Percent Cost to Duplicates	0
Type:	Duplicate

Module "for funding check PreC" ID: "Separate 26"
Type: Separate
From template: BasicProcess
Module Description: None
Operands:

# of Duplicates:	1
Member Attributes:	Retain Original Entity Values
Name:	for funding check PreC
Percent Cost to Duplicates	0
Type:	Duplicate

Module "to Acquisition Modernization or Sustainment Activity" ID: "Process 4"
Type: Process
From template: BasicProcess
Module Description: None
Operands:

Action:	D
Allocation:	VA
Delay Type:	Triangular
Expression:	1
Maximum:	1460
Minimum:	180
Name:	to Acquisition Modernization or Sustainment Activity
Priority:	1
Report Statistics	No
Std Dev:	.2
Type:	Standard
Units:	Days
Value	903
